THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR APRIL 1866.

CONTRIBUTORS TO THIS VOLUME.

CHARLES M. ALLIN, M. D., *Surgeon to New York Hospital.*
JOHN ASHHURST, Jr., M. D., *one of the Surgeons to the Episcopal Hospital, Phila.*
WALTER F. ATLEE, M. D., *one of the Surgeons to St. Joseph's Hospital, Philadelphia.*
J. H. BEACH, M. D., *of Coldwater, Michigan.*
JOHN J. BLACK, M. D., *of Philadelphia.*
BEDFORD BROWN, M. D., *of Washington, D. C.*
JOSEPH CARSON, M. D., *Professor of Mat. Med. in the University of Pennsylvania.*
EDWARD T. CASWELL, M. D., *of Providence, R. I.*
D. FRANCIS CONDIE, M. D., *of Philadelphia.*
JAMES M. CORSE, M. D., *of Philadelphia.*
JAMES B. CUTTER, M. D., *of Newark, New Jersey.*
J. M. DA COSTA, M. D., *one of the Physicians to the Pennsylvania Hospital.*
J. Y. DALE, M. D., *Agricultural College, Pennsylvania.*
PLINY EARLE, M. D., *Superintendent of the State Hospital for the Insane at Northampton, Mass.*
CHARLES M. ELLIS, M. D.
THOMAS ADDIS EMMET, M. D., *Surgeon to State Women's Hospital, New York.*
PAUL F. EVE, M. D., *Professor of Surgery in the University of Nashville, Tennessee.*
B. F. GIBBS, M. D., *Surgeon U. S. N.*
WM. A. GORDON, M. D., *of New Bedford, Mass.*
S. W. GROSS, M. D., *late Brevet Lieutenant-Colonel and Surgeon U. S. Vols.*
EDWARD HARTSHORNE, M. D., *late one of the Surgeons to the Pennsylvania Hospital.*
ISAAC HAYS, M. D., *of Philadelphia.*
CHARLES C. HILDRETH, M. D., *of Zanesville, Ohio.*
EDGAR HOLDEN, M. D., *late Assist. Surg. U. S. N., of Newark, N. J.*
JAMES M. HOLLOWAY, M. D., *Prof. of Anatomy in the University of Louisville, Ky.*
WILLIAM HUNT, M. D., *one of the Surgeons to the Pennsylvania Hospital.*
W. KEMPSTER, M. D., *of Syracuse, N. Y.*
THADDEUS L. LEAVITT, M. D., *of Germantown, Pa.*
J. AITKEN MEIGS, M. D., *of Philadelphia.*
A. P. MERRILL, M. D., *of New York City.*
W. P. MOON, M. D., *late Executive Officer of Mower U. S. A. General Hospital, Chestnut Hill, Pa.*
J. W. MOORMAN, M. D., *of Hardinsburg, Ky.*
J. H. PACKARD, M. D., *one of the Surgeons to the Episcopal Hospital, Philadelphia.*
JOHN PEACH, M. D., *of Collington, Maryland.*
J. B. PEALE, M. D., *Holmesburg, Pa.*
GEORGE PEPPER, M. D., *of Philadelphia.*
WM. PEPPER, M. D., *one of the Resident Physicians to the Pennsylvania Hospital.*
J. H. POOLEY, M. D., *of Yonkers, N. Y.*
ISAAC G. PORTER, M. D., *of New London, Conn.*
D. PRINCE, M. D., *of Jacksonville, Ill.*
J. C. REEVE, M. D., *of Dayton, Ohio.*
JAMES E. REEVES, M. D., *of Fairmont, W. Va.*
ROBERT REYBURN, M. D., *Surgeon U. S. Vols.*
D. B. ST. JOHN ROOSA, M. D., *Aural Surgeon to the New York Eye and Ear Infirmary.*
W. S. W. RUSCHENBERGER, M. D., *Surgeon U. S. N.*
J. H. SALISBURY, M. D., *Professor of Physiology, Histology, &c., in Charity Hospital Medical College, Cleveland, Ohio.*
ALFRED STILLÉ, M. D., *Professor of the Practice of Medicine in the University of Pennsylvania.*
HORATIO ROBINSON STORER, M. D., *Assistant in Obstetrics and Medical Jurisprudence in the Harvard University, &c.*
HORACE WILLIAMS, M. D., *of Philadelphia.*

TO READERS AND CORRESPONDENTS.

All articles intended for the *Original Departments* of this Journal must be communicated to it for *publication exclusively.*

Contributors who design to favour us with original articles for the next No. should forward them before the 1st of May.

Compensation is allowed for original articles and reviews, except when illustrations or extra copies are required. When desired, a *limited* number of extra copies *of papers* will be furnished, if the request for them be made at the time the communications are sent. The extensive circulation of this journal renders extra copies comparatively of little value to authors.

Want of space has compelled us to postpone the insertion of several Bibliographical Notices prepared for this number until our next, among others one of Circular No. 6, from Surgeon-General's Office.

Communications are on hand from Drs. Salisbury, Prince, Walter, Fox, Mead, Lyle, Haughton, Kempf, Wetherbee, Nixon, Hildreth, and Freeman.

The following works have been received:—

Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Volume the 48th. London: Longmans, Green, & Co., 1865. (From the Society.)

A Practical Treatise on Urinary and Renal Diseases, including Urinary Deposits. Illustrated by numerous cases and engravings. By William Roberts, M. D., F. R. C. P., Lond.; Lecturer on Medicine in the Manchester School of Medicine, &c. &c. London: Walton & Maberly, 1865. (From the Author.)

On Cancer: its Allies and Counterfeits. By Thomas Weeden Cooke, Surgeon to the Cancer Hospital and to the Royal Free Hospital, etc. etc. etc. London: Longman, Green, & Co., 1865. (From the Publishers.)

On the Speedy Relief of Pain and other Nervous Affections, by means of the Hypodermic Method. By Charles Hunter, Surgeon to the Royal Pimlico Dispensary, etc. London: John Churchill & Sons, 1865. (From the Author.)

The Restorative Treatment of Pneumonia. By John Hughes Bennett, M. D., F. R. S. E., Prof. of Institutes of Medicine, and Senior Prof. of Clinical Medicine in the University of Edinburgh, &c. &c. &c. Third edition. Edinburgh: Adam and Charles Black, 1866. (From the Author.)

A Treatise on the Principles and Practice of Medicine; designed for the use of Practitioners and Students of Medicine. By Austin Flint, M. D., Professor of the Princip. and Pract. Medicine in the Bellevue Hospital Medical College, &c. &c. &c. Philadelphia: Henry C. Lea, 1866. (From the Publisher.)

A Practical Treatise on Urinary and Renal Diseases, including Urinary Deposits. Illustrated by numerous cases and engravings. By William Roberts, M. D., F. R. C. P., London. Philadelphia: Henry C. Lea, 1866. (From the Publisher.)

The Malformations, Diseases, and Injuries of the Fingers and Toes, and their Surgical Treatment. By Thomas Annandale, F. R. C. S., Edinb., Lecturer on Surgery, Asst. Surg. to Royal Infirmary. The Jacksonian Prize Essay for 1864. Philadelphia: J. B. Lippincott & Co., 1866. (From the Publishers.)

Diploteratology. By J. G. Fisher, M. D., of Sing Sing, N. Y. Part I. (From the Author.)

The Physiology of Man; designed to represent the existing State of Physiological Science, as applied to the Functions of the Human Body. By Austin Flint, Jr., M. D., Prof. of Phys. and Micros. in the Bellevue Hospital Medical College, New York, &c. &c. &c. Introduction: The Blood; Circulation; Respiration. New York: D. Appleton & Co., 1866. (From the Author.)

Facts in relation to Placenta Prævia, with a Review of the various Opinions respecting its Anatomy, Physiology, Pathology, and Treatment. By Isaac E. Taylor, M. D., Prof. of Obstet., Diseases of Women and Children, in Bellevue Hospital Med. College, &c. &c. &c. Albany, 1865. (From the Author.)

Circular No. 6. War Department, Surgeon-General's Office, Washington, November 1, 1865. Reports on the Extent and Nature of the Materials available for the preparation of a Medical and Surgical History of the Rebellion. Printed for the Surgeon-General's Office. Philadelphia, 1865. (From the Surgeon-General.)

Annual Report of the Surgeon-General, United States Army, 1865. (From the Surgeon-General.)

Twelfth Report upon the Registration of Births, Marriages, and Deaths, in the State of Rhode Island, for the year ending December 31, 1864; prepared under the direction of JOHN R. BARTLETT, Secretary of State. Providence, 1866. (From Edwin M. Snow, M. D.)

Second Annual Report of the Board of State Charities; to which are added the Report of the Secretary, and the General Agent of the Board. January, 1866. Boston, 1866.

Second Annual Report of the Trustees of the City Hospital, Boston, with Report of the Superintendent, Act of the Legislature, Ordinances of the City Council, Rules and Regulations of the Hospital, &c. Boston, 1866.

Report of the General Superintendent of the Philadelphia Branch of the U. S. Sanitary Commission to the Executive Committee, January 1, 1866. Philadelphia, 1866.

Prize Essay, to which the first prize of one hundred dollars, offered by the South Carolina Medical Association, was awarded February, 1860. Illustrations of Disease with the Microscope, Clinical Investigations, aided by the microscope, and by chemical reagents; with microscopical observations of pathological specimens, medical and surgical, obtained in Charleston, S. C. A contribution intended to disclose the minute history of the diseases prevailing in this latitude, and to assist future students, with upwards of five hundred original drawings from nature, made at the time of the observations. By FRANCIS PEYRE PORCHER, M. D., Lecturer on Materia Medica and Therapeutics. Part First, with 110 illustrations on wood. Charleston, S. C., 1861. (From the Author.)

Memoir of the Life and Character of Professor Valentine Mott (Facile princeps). By Dr. SAMUEL W. FRANCIS (Fellow of the New York Academy of Medicine). Second edition. New York, 1865. (From the Author.)

An Address on the Limits of Education, read before the Massachusetts Institute of Technology, Nov. 16, 1865. By JACOB BIGELOW, M. D. Boston, 1865. (From the Author.)

Introductory Address at the Opening of the Sixth Session of the Miami Medical College of Cincinnati, Nov. 1, 1865, on Professional Success. By GEORGE MENDENHALL, M. D., Prof. of Obstetrics. Cincinnati, 1865.

An Introductory Lecture to a Course of Demonstrative Instruction in Histology and Pathological Anatomy. By R. CRESSON STILES, M. D., Consulting Physician to King's County Hospital, &c. New York, 1866. (From the Author.)

A Communication from the City Physician on Asiatic Cholera. Is it a Contagious Disease? Boston, 1866. (From Dr. Wm. Read.)

Annual Report of the Trustees of the Wisconsin State Hospital for the Insane, for the year ending September 30, 1865. Madison, 1865. (From Dr. A. H. Van Nostrand, Sup't.)

Annual Report of Resident Physician of King's County Hospital, for the year ending July 31, 1865. Brooklyn, 1865. (From R. C. Stiles, M. D., Resident Physician.)

Report of the Board of Managers of the Pennsylvania Hospital, Philadelphia, 1865.

Report of the Pennsylvania Hospital for the Insane, for the year 1865. By THOMAS S. KIRKBRIDE, M. D., Physician-in-Chief and Superintendent. Philadelphia, 1866. (From Dr. Kirkbride.)

Second Annual Report of the New York Womans' Infirmary Association, Washington Heights (150th St.) New York City. December, 1865. New York, 1866.

Twenty-Seventh Annual Report of the Board of Trustees and Officers of the Central Ohio Lunatic Asylum to the Governor of the State of Ohio, for the year 1865. Columbus, 1866.

Eleventh Annual Report of the Board of Trustees, and Officers of the Southern Ohio Lunatic Asylum to the Governor of the State of Ohio, for the year 1865. Columbus, 1866.

An Essay on the Life in Nature. By LOUIS MACKALL, M. D., Washington, 1865.

An Essay on the Law of Muscular Action. By LOUIS MACKALL, M. D. Second edition, corrected and enlarged. Washington, 1865.

Extract from an Unpublished Essay on Physical Force. By LOUIS MACKALL, M. D. Washington, 1865.

Annual Meteorological Synopsis for the Year 1865; observations taken three times a day. By J. B. TREMBLEY, M. D., Toledo, Ohio. (From the Author.)

Report on the Use of Pressure in the Treatment of Gonorrhœal and Purulent Ophthalmia. By Surgeon Jos. S. HILDRETH, U. S. V. Read before the American Ophthalmological Society, June 13, 1865. New York, 1865. (From the Author.)

Disease—a Part of the Plan of the Creation. The Annual Discourse before the Massachusetts Medical Society, May 31, 1865. By Benjamin E. Cotting, M. D. Boston, 1866. (From the Author.)

An Account of the Proceedings at the Laying of the Corner-Stone of the State Emigrant Hospital on Ward's Island, August 10th, 1864; Address with Statistics, by Hon. GULIAN C. VERPLANCK. New York, 1865.

Transactions of the Medical Society of the State of New York for the year 1865. Albany, 1865. (From Dr. Geo. G. Bradford.)

Fifteenth Anniversary Meeting of the Illinois State Medical Society, held in Bloomington, May 2 and 3, 1865. Chicago, 1865.

Proceedings of the Academy of Natural Sciences of Philadelphia, November and December, 1865.

Extracts from the Records of the Boston Society for Medical Improvement, with papers read before the Society. By CHARLES D. HOMANS, M. D., Secretary of the Society. Vol. V., No. 3. Boston, 1866.

Catalogue of the Trustees, Officers, and Students of the University of Pennsylvania, One Hundred and Sixteenth Session, 1865–66. Philadelphia, 1866.

Catalogue and Announcement of the Medical Department of the University of Pennsylvania for the One Hundred and First Session, 1866–67, including the Auxiliary Faculty of Medicine. Philadelphia, 1866.

Catalogue of the Officers and Students of the University of Michigan, with a Statement of the Courses of Instruction in the Various Departments, 1866. Ann Arbor, 1866. (From the Medical Faculty.)

Circular and Catalogue of the Long Island College Hospital, Brooklyn, N. Y. Session for 1866. Brooklyn, 1865.

Medical Department of the University of Louisville; Announcement for the Session of 1865–66. Louisville, Ky., 1865.

The following Journals have been received in exchange:—

Annales Médico-Psychologiques. Par MM. les Docteurs BAILLARGER et CERISE. July, September, November, 1865.

Revue de Thérapeutique Médico-Chirurgicale. Par A. MARTIN-LAUZER, M.D., &c. Nos. 24, 1865, 1, 2, 3, 5, 1866.

The British and Foreign Medico-Chirurgical Review. January, 1866.

The Half-Yearly Abstract of the Medical Sciences. Vol. 42. July—December, 1865. London: JOHN CHURCHILL & SONS, 1865.

The Retrospect of Medicine. Edited by W. BRAITHWAITE, M. D., and JAMES BRAITHWAITE, M. D. Vol. LII. July—December, 1865. London: Simpkin Marshall & Co., 1866.

The Medical Times and Gazette. January, February, 1866.

British Medical Journal. Nos. 255, 256, 257, 258, 259, 260, 261, 262, 1866.

Edinburgh Medical Journal. November, December, 1865, January, 1866.

The Medical Press. December, 1865.

Medical Press and Circular. January, February, 1866.

The Glasgow Medical Journal. January, 1866.

The Ophthalmic Review. Edited by J. ZACHARIAH LAURENCE, of London, and THOMAS WINDSOR, of Manchester. January, 1866.

Medical and Surgical Review. [Australasian.] September, October, 1865.

The Indian Annals of Medical Science, October, 1865.

Canada Medical Journal. Edited by G. E. FENWICK, M. D., and F. W. CAMPBELL, M. D. December, 1865, January, February, 1866.

The Boston Medical and Surgical Journal. Edited by SAMUEL L. ABBOT, M. D., and JAS. C. WHITE, M. D. January, February, March, 1866.

The American Journal of Insanity. Edited by the Medical Officers of the New York State Lunatic Asylum. October, 1865.

The New York Medical Journal. January, February, March, 1866.

The St. Louis Medical and Surgical Journal. Edited by M. L. LINTON, M. D., and FRANK W. WHITE, M. D. January and February, 1866.

The Cincinnati Lancet and Observer. Edited by EDWARD B. STEVENS, M. D., and JOHN A. MURPHY, M. D. January, February, March, 1866.

Buffalo Medical and Surgical Journal. Edited by JULIUS F. MINER, M. D. December, 1865, January, February, 1866.

The Medical Record. March, 1866.

The Cincinnati Journal of Medicine. Edited by GEO. C. BLACKMAN, M. D., THEOPHILUS PARVIN, M. D., ROBERTS BARTHOLOW, M. D. January, February, 1866.

The Chicago Medical Journal. Edited by DE LASKIE MILLER, M. D., and EPHRAIM INGALS, M. D. October, November, December, 1865.

The Chicago Medical Journal. January, February, 1866.

The Chicago Medical Examiner. Edited by N. S. DAVIS, M. D. October, November, December, 1865, January, February, March, 1866.

The Pacific Medical and Surgical Journal and Press. Edited by HENRY GIBBONS, M. D. December, 1865, February, 1866.

The Richmond Medical Journal. Edited by E. S. GAILLARD, M. D., and W. S. MCCHESNEY, M. D., January, February, March, 1866.

The Savannah Journal of Medicine. Edited by JURIAH HARRIS, M. D., J. B. READ, M. D., and J. G. THOMAS, M. D. January, 1866.

The Galveston Medical Journal. Edited by GREENSVILLE DOWELL, M. D. January and February, 1866.

The Medical and Surgical Reporter. Edited by S. W. BUTLER, M. D. January, February, March, 1866.

The American Journal of Pharmacy. Published by Authority of the Philadelphia College of Pharmacy. Edited by WILLIAM PROCTER, Jr. January, March, 1866.

The Druggists' Circular and Chemical Gazette. January, February, March, 1866.

The Dental Cosmos. Edited by J. H. MCQUILLEN, D. D. S., and GEORGE J. ZIEGLER, M. D. January, February, March, 1866.

Communications intended for publication, and Books for Review, should be sent *free of expense*, directed to ISAAC HAYS, M. D., Editor of the American Journal of the Medical Sciences, care of Mr. Henry C. Lea, Philadelphia. Parcels directed as above, and (carriage paid) under cover, to Messrs. Trübner & Co., Booksellers, No. 60 Paternoster Row, *London*, *E. C.*; or M. Hector Bossange, Lib. quai Voltaire, No. 11, *Paris*, will reach us safely and without delay. We particularly request the attention of our foreign correspondents to the above, as we are often subjected to unnecessary expense for postage and carriage.

Private communications to the Editor may be addressed to his residence, 1525 Locust Street, Philadelphia.

ALL REMITTANCES OF MONEY, and letters on the *business* of the Journal, should be addressed *exclusively* to the publisher, Mr. Henry C. Lea.

☞ The advertisement-sheet belongs to the business department of the Journal, and all communications for it should be made to the publishers.

CONTENTS

OF THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

NO. CII. NEW SERIES.

APRIL 1866.

ORIGINAL COMMUNICATIONS.

MEMOIRS AND CASES.

ART. PAGE

I. Microscopic Researches, relating to the Histology and Minute Anatomy of the Spleen and Lacteal and Lymphatic Glands; showing their Ultimate Structure and their Organic Elements, and their Highly Interesting and Important Functions; with some Remarks on the Cause of the Ropiness of Mucus, and the tendency of all Healthy and many Diseased Cells to be Metamorphosed into filaments. By. J. H. Salisbury, M. D., Prof. of Histology, Physiology, and Pathology in Charity Hospital Medical College, Cleveland, Ohio. (With a plate.) 307

II. Reflections upon the Epidemic of Yellow Fever which Visited Pensacola Navy Yard in the Summer and Autumn of 1863. By B. F. Gibbs, M. D., Surgeon U. S. N. 340

III. Hospital Gangrene, as it occurred at Patterson Park U. S. General Hospital, Baltimore. By W. Kempster, M. D., of Syracuse, New York. 351

IV. On Ether as a Local Application. By John J. Black, M. D., of Philadelphia. 356

V. On Chloroform and Ergot in Obstetric Practice. By Charles C. Hildreth, M. D., of Zanesville, Ohio. 361

VI. Remarks concerning some of the Diseases prevailing among the Freedpeople in the District of Columbia (Bureau Refugees, Freedmen, and Abandoned Lands). By Robert Reyburn, M. D., Surgeon U. S. Vols. 364

VII. On Torpedo Wounds. By S. W. Gross, A. M., M. D., late Bvt. Lt.-Col., and Surgeon U. S. Vols. 369

VIII. Case of Neuralgic and Paralytic Affection following Precipitate Labour. By Isaac G. Porter, M. D., New London, Conn. 372

IX. On Fractures of the Larynx and Ruptures of the Trachea. By Wm. Hunt, M. D., one of the Surgeons to the Pennsylvania Hospital. With a case. 378

X. Report of Eight Cases of Lithotomy performed during the past four years. By Paul F. Eve, M. D., Prof. of Surgery in the University of Nashville. Read before the Nashville Medical Society, January 3, 1866. 384

XI. On the Use of the Hypersulphite of Soda in Intermittent Fever. By Thaddeus D. Leavitt, M. D., of Germantown, Pa. 388

XII. On the Treatment of Certain Chronic and Acute Affections of the Skin by means of the Chloride of Iron. By Bedford Brown, M. D., of Washington City, D. C. 389

XIII. Shoulder Presentation in Four Successive Labours—Version accomplished in the last two in the Position on the Knees and Breast. By Charles C. Hildreth, M. D., of Zanesville, Ohio. 395

ART. PAGE
XIV. Case of Ovariotomy. Reported by James E. Reeves, M. D., Fairmont, W. Va. 397
XV. Reduction of an Inverted Uterus of Eight Months' Duration. By Thomas Addis Emmet, M. D., Surgeon to the State Woman's Hospital, New York. [Read before the New York Obstet. Soc., March 6, 1866.] 403

TRANSACTIONS OF SOCIETIES.

XVI. Summary of the Proceedings of the Pathological Society of Philadelphia. 405
Remittent Fever; Albuminous Urine; Pigment in Blood; Death; Pigment in all Tissues of Body. By Wm. Pepper, M. D. . . 405
Acute Infiltrated Tubercle Associated with Malaria; Death in Twenty Days. By Wm. Pepper, M. D. 406
Remittent Fever; Death one and a half hour after Admission; Pigment in the Brain, Liver, and Spleen, &c.; Albuminuria. By Wm. Pepper, M. D. 408
Tubercular Meningitis. By T. H. Andrews, M. D. . . . 409
Spina Bifida; Fatty Kidney. By Dr. Packard. 411
Fracture of Base of Skull. By Dr. Wm. Pepper. . . . 412
Fracture through Squamous and Petrous Portions of Right Temporal Bone, causing Rupture of Arteria Meningea Media; Effusion of large Clot of Blood. By Dr. Wm. Pepper. 413
Gunshot Wound; Ball passing through Thyroid Gland, opening Œsophagus, perforating Vertebral Body, and lodging in Substance of the Spinal Cord; Paraplegia; Inability to Swallow; Death in 25¾ hours. By Wm. Pepper, M. D. 414
Medullary Cancer. By S. W. Mitchell, M. D. 418
Report of Examination of Tumour. By Wm. Pepper, M. D. . 419
Lithotomy. By John Ashhurst, Jr., M. D. 420
Polypi of the Vocal Chords. By S. W. Mitchell, M. D. . . 422
Suppurative Meningitis following a Blow upon the Nose, which produced a Comminuted Fracture of the Nasal Bones, the Turbinated Bones, and the Vomer. By Wm. Pepper, M. D. . . 423
Abscess of the Spleen. By George Pepper, M. D. . . . 424

REVIEWS.

XVII. Hypodermic Injections in the Treatment of Disease.
1. Hypodermic Injections in the Treatment of Neuralgia, Rheumatism, Gout, and other Diseases. By Antoine Ruppaner, M. D., Fellow of the Massachusetts Medical Society. pp. 160. Boston, 1865.
2. On the Speedy Relief of Pain and other Nervous Affections, by means of the Hypodermic Method. By Charles Hunter, Surgeon to the Royal Pimlico Dispensary, etc. etc. pp. 64. London: John Churchill & Sons, 1865.
3. Die Hypodermatischen Injectionen nach clinischen Erfahrungen, von Dr. E. Lorent in Bremen. pp. 48. Leipzig, 1865.
Clinical Experience with Hypodermic Injections, by Dr. E. Lorent, of Bremen.
4. Die Hypodermatische Injection der Arzneimittel. Nash physiologischen Versuchen und klinischen Erfahrungen bearbeitet, von Dr. Albert Eulenberg, Privat-Docent und Assistant Arzt der chirurgischen Universitäts-Klinik in Greifswald. Eine von der Hufelandischen medicinisch-chirurgischen Gesellschaft gekrönte Preisschritt. Mit einer lithographirten Tafel. pp. 218. Berlin, 1865.
The Hypodermic Injection of Medicines, treated according to Physiological Experiments and Clinical Experience, by Dr. Albert Eulenberg, Private Teacher and Assistant Physician of the Surgical Clinic of the University of Griefswald. A Prize Essay of the Hufeland Medico-Chirurgical Society. 427

ART. PAGE

XVIII. Stimulants and Narcotics, their Mutual Relations; with Special Researches on the Action of Alcohol, Ether, and Chloroform on the Vital Organism. By Francis E. Anstie, M. D., M. R. P. C., Assistant Physician to Westminster Hospital, Lecturer on Materia Medica and Therapeutics to the School, and formerly Lecturer on Toxicology. 8vo. pp. 489. London: Macmillan & Co., 1864.

The same. 8vo. pp. 414. Philadelphia: Lindsay and Blakiston, 1865. . 438

XIX. Laryngoscopy.

1. The Use of the Laryngoscope in Diseases of the Throat, with an Appendix on Rhinoscopy. By Morell Mackenzie, M. D., etc. Philadelphia: Lindsay and Blakiston, 1865. 8vo. pp. 160.
2. Rhinoscopy and Laryngoscopy, their Value in Practical Medicine. By Dr. Friedrich Semeleder, Physician in Ordinary to His Majesty the Emperor of Mexico, etc. Translated from the German by Edward T. Caswell, M. D. With wood-cuts and two chromo-lithographic plates. New York: William Wood & Co., 1866. 8vo. pp. 191.
3. Die Inhalations-Therapie in Krankheiten der Respirations-Organe mit besonderer Berücksichtigung der durch das Laryngoscop ermittelten Krankheiten des Kehlkopfs. Von Dr. George Lewin, dirigirendem Arzte in der Königlichen Charité ad interim, &c. Mit 25 Holzschnitten. Zweite vermehrte und verbesserte Auflage. Berlin: Hirschwald, 1865. 8vo. pp. 506.

Inhalation Treatment of Diseases of the Respiratory Organs, with Special Reference to the Diseases of the Larynx as made known by the Laryngoscope. By Dr. George Lewin, Attending Physician to the Royal Charité ad interim. With 25 wood-cuts. Second enlarged and improved edition. 464

BIBLIOGRAPHICAL NOTICES.

XX. Transactions of American State Medical Societies:—

1. Transactions of the Medical Society of the State of New York for the Year 1865. 8vo. pp. 376.
2. Transactions of the Twentieth Annual Meeting of the Ohio State Medical Society, held at Ohio White Sulphur Springs, June 20, 21, and 22, 1865. 8vo. pp. 79. 473

XXI. Reports of American Hospitals for the Insane.

1. Of the Maine Hospital, for the fiscal year 1864–65.
2. Of the Vermont Asylum, for the fiscal year 1864–65.
3. Of the Worcester (Mass.) Hospital, for the fiscal years 1864–65.
4. Of the Taunton (Mass.) Hospital, for the fiscal year 1864–65.
5. Of the Northampton (Mass.) Hospital, for the fiscal year 1864–65.
6. Of the State Hospital of Pennsylvania, for the year 1865.
7. Of the Dixmont (Western Pennsylvania) Hospital, for the year 1865.
8. Of the U. S. Government Hospital, for the fiscal year 1864–65. . 480

XXII. Guy's Hospital Reports. Edited by Samuel Wilks, M. D. Third series, vol. xi. London: John Churchill & Sons, 1865. 8vo. pp. 466. . 489

XXIII. On the Arrangement of the Muscular Fibres in the Ventricles of the Vertebrate Heart; with Physiological Remarks. By James Bell Pettigrew, M. D., Edinburgh, Assistant in the Museum of the Royal College of Surgeons of England, etc. From the Philosophical Transactions, Part III., 1864. London. 4to. pp. 445 to 500.

On the Relation, Structure, and Function of the Valves of the Vascular System in Vertebrata. By James Bell Pettigrew, M. D., Edinburgh, etc. Reprinted from the Transactions of the Royal Society of Edinburgh, Vol. XXIII., Part III. Edinburgh. 4to. pp. 761 to 805. . . . 497

ART. PAGE
XXIV. A Practical Essay on the Use of the Nitrate of Silver, in the Treatment of Inflammation, Wounds, and Ulcers. By John Higginbottom, F. R. S., Hon. Fellow of the Royal College of Surgeons of England. Third edition, much improved. John Churchill & Sons, London, 1865. 8vo. pp. 172. 502
XXV. Contributions to Bone and Nerve Surgery. By J. C. Nott, M. D., Professor of Surgery in Mobile Medical College. Philadelphia: J. B. Lippincott & Co., 1866. 12mo. pp. 96. 506
XXVI. On Wakefulness; with an Introductory Chapter on the Physiology of Sleep. By William A. Hammond, M. D., Fellow of the College of Physicians of Philadelphia: Member of the Philadelphia Pathological Society, etc. etc. Philadelphia: J. B. Lippincott & Co., 1866. 12mo. pp. 93 507
XXVII. Annual Report of the Surgeon General United States Army, 1865. 8vo. pp. 7. Washington, 1865. 508
XXVIII. The Student's Book of Cutaneous Medicine and Diseases of the Skin. By Erasmus Wilson, F. R. S. New York: W. Wood & Co., 1865. 8vo. pp. 445. 509
XXIX. On the Diseases, Injuries, and Malformations of the Rectum and Anus: with remarks on Habitual Constipation. By T. J. Ashton, formerly Surgeon to the Blenheim Dispensary, etc. etc. With Illustrations. Second American from the Fourth and Revised English Edition. Philadelphia: Henry C. Lea, 1865. 8vo. pp. 287. 510
XXX. Lectures on the Diseases of Infancy and Childhood. By Charles West, M. D., F. R. C. P., Physician to the Hospital for Sick Children. Fourth American from the Fifth Revised and Enlarged English Edition. Philadelphia: Henry C. Lea, 1866. 8vo. pp. 655. 510

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

FOREIGN INTELLIGENCE.

Anatomy and Physiology.

PAGE
1. The Functions of the Nucleus. By M. Balbiani. . . . 511
2. Decomposition of Air by the Tissues. By M. Demarquay. . 511
3. Production of Animal Heat. By M. Berthelot. . . . 511
4. Existence of Glycogen in the Tissue of Entozoa. By Michael Foster, M. B. 512

Materia Medica and Pharmacy.

5. New and Ready Mode of Producing Anæsthesia. By Dr. B. W. Richardson. 512
6. Anæsthetic and Sedative Properties of Bichloride of Carbon or Chloro-carbon. By Prof. Simpson. 513
7. Solanum Paniculatum. By M. Stanislas Martin. . . . 515
8. Physiological Action of Iron. By Dr. A. Sasse. . . . 515

Medical Pathology and Therapeutics, and Practical Medicine.

PAGE

9. The Polymorphism of Disease. 515
10. Medical Statistics. By M. Claude Bernard. . . . 517
11. Morbid Anatomy and Early Physical Signs of Pneumonia. By Dr. T. H. Waters. . . 518
12. Certain Forms of Hæmoptysis, unassociated with Pulmonary Tuberculosis. By Dr. Richard Payne Cotton. 521
13. Snow's Theory of the Causes of Cholera Explained and Illustrated. By. Dr. Richardson . 521
14. Efficacy of Lemon-Juice in Diphtheria. By M. Guersant. . 524
15. Hyposulphite of Soda in Diphtheria. By Mr. J. C. Maynard. 524
16. Treatment of Articular Rheumatism and other Affections by the Subcutaneous Injection of Sulphate of Quinia. By M. Dodenil. 525
17. The Hot Mustard Hip-bath in Diarrhœa and Choleraic Diarrhœa. By. Dr. Joseph Bullar. 525
18. Atropia in the Treatment of Constipation. By Dr. Alexander Fleming. 526
19. Curability of Bright's Disease. By Dr. Arthur Hill Hassall. . 529
20. Entozoa in the Muscles of Animals Destroyed by Cattle Plague. By Mr. Lionel S. Beale. 530
21. Outbreak of Trichinosis at Hedersleben. By Dr. Kratz. . 531
22. Diagnosis by means of the Ophthalmoscope. By M. Bouchut. 531

Surgical Pathology and Therapeutics, and Operative Surgery.

23. Use of Chloride of Zinc in Surgical Operations for Removal of Cancerous Tumours. By C. De Morgan, Esq. 532
24. Subcutaneous Ulceration. By Jas. Paget. 535
25. Cancer of the Testis in Children. By M. Guersant. . . 536
26. Arterio-Venous Cyst in the Popliteal Nerve; Amputation; Recovery. By Mr. C. H. Moore. 538
27. Removal of the entire Tongue for Epithelial Disease, by Means of the Ecraseur. By Mr. Paget. 538
28. Excision of the Tongue. By Prof Jas. Syme. . . . 539
29. Foreign Bodies in the Air-Passages of Children. By M. Guersant. 540
30. Polypi of Larynx; Removal by Division of the Thyroid Cartilage. By Dr. Gilewski. . 543
31. Wounds of Joints. By Dr. Wm. Rutherford. . . . 544
32. The Sequel in some Cases of Excision of Joints. . . . 545
33. Trephining the Spine. By Dr. Samuel Gordon. . . . 546
34. Ovariotomy in Relation to Disease of both Ovaries. By Professor von Scanzoni. . . 548

Ophthalmology.

35. Changes which take place in the Fundus of the Eye in Progressive Myopia. By Mr. Rouse. 549
36. Physiology and Pathology of Certain Forms of Dilated Pupil. By Dr. Jos. Bell. . . . 549
37. Atropia Points. By Mr. J. Z. Laurence. 552

Midwifery.

38. Use of the Wire-Ribbon in Some Cases of Difficult Turning. By Dr. Heyerdahl. . . . 552
39. Influence of Chlorate of Potash on the Life of the Fœtus in Utero. By Dr. Bruce. . . 553
40. Procidentia Uteri. By Dr. J. Marion Sims. 554

Hygiene.

41. Application of Ozone to Sanitary Purposes. By Dr. John Day. 555
42. Deodorization and Disinfection. By Dr. Thos. Herbert Baker. . 556
43. Utilization of Fecal Matter. By Dr. Lecadre. . . . 557

Medical Jurisprudence and Toxicology.

44. Death from Chloroform. By Dr. J. D. Gillespie. . . . 557
45. Respiration and Signs of Life in a Fœtus delivered at about Five Months' Gestation. By Dr. J. D. Moore. . . . 558

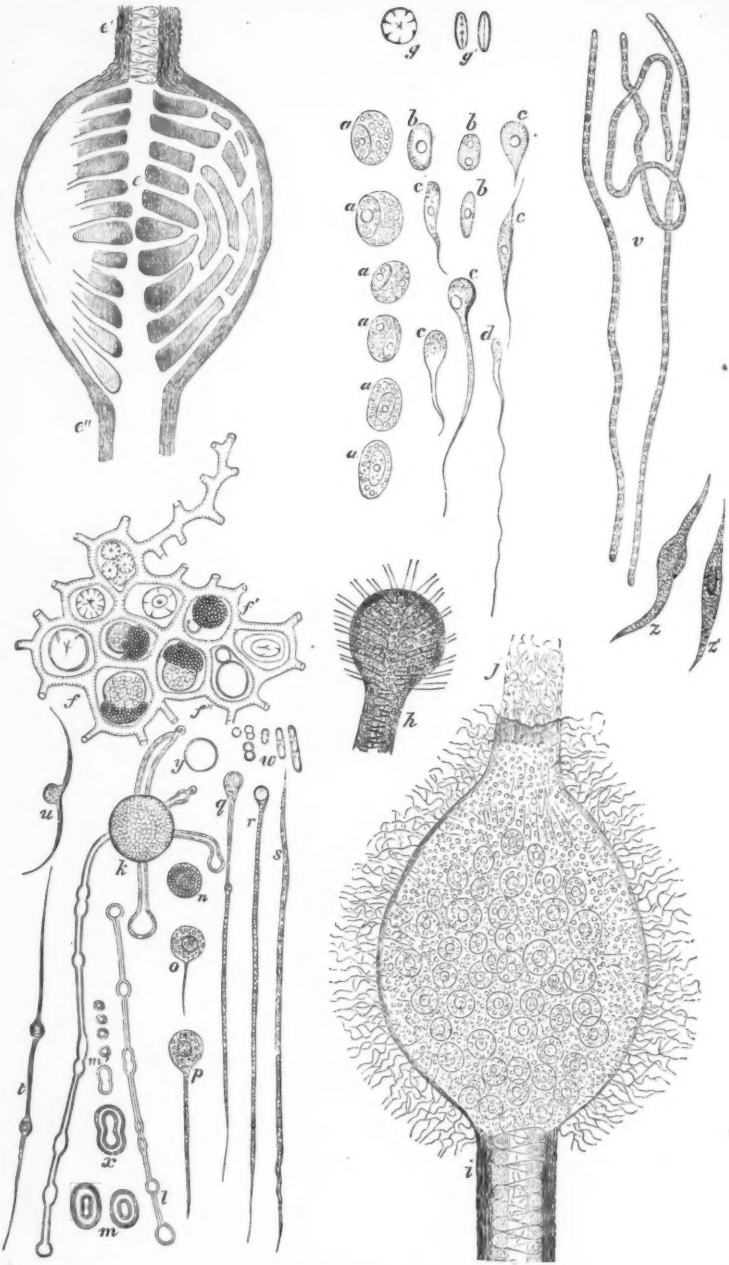
AMERICAN INTELLIGENCE.

Original Communications.

Case of Prolapsus Recti Successfully Treated. By John Peach, M. D. 559
Case of Tapeworm Probably Contracted by Eating Beef or Veal. By J. H. Beech, M. D. . . 559
Poisoning by Eating the Fruit of the Rhus Toxicodendron. By J. W. Moorman. . . . 560
Spontaneous Umbilical Hemorrhage. By J. H. Pooley, M. D. 560

Domestic Summary.

Aphasia. By Prof. Austin Flint. . 561
Gutta-Percha Shoe in the Treatment of Talipes. By Dr. Alfred C. Post. 562
Amputation at the Hip-Joint. By Dr. A. M. Fauntleroy. . . 563
Colotomy for Relief of Cancer of the Rectum. By Prof. Geo. C. Blackman. 564
Gunshot Wound of the Brain; the Ball traversing both Hemispheres; Death from Scarlatina six months afterwards. By Dr. John Hutchinson. . . . 564
Dislocation of the Patella on its Axis. By Dr. Rochester. . 564
Dislocation of the Thigh upon the Dorsum Ilii. By Dr. A. M. Fauntleroy. 565
Constituents of Veratrum Viride. By Mr. Charles Bullock. . 565
The late Professor Chandler R. Gilman. 566


c'
c
c''
g
g
a
b
b
c
a
c
b
c
a
c
d
a
c
a
a
v
z
z
f'
f''
f
h
j
i
u
k
l
m
n
o
p
q
r
s
t
x
10

THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR APRIL 1866.

ART. I.—*Microscopic Researches, relating to the Histology and Minute Anatomy of the Spleen and Lacteal and Lymphatic Glands; showing their Ultimate Structure and their Organic Elements, and their Highly Interesting and Important Functions; with some Remarks on the Cause of the Ropiness of Mucus, and the tendency of all Healthy and many Diseased Cells to be Metamorphosed into filaments.* By J. H. SALISBURY, M. D., Prof. of Histology, Physiology, and Pathology in Charity Hospital Medical College. (With a plate.)

Previous Knowledge of the Spleen.—Although much has been said from time to time by both ancient and modern writers, concerning the minute structure, organic elements, and functions of the spleen, yet really little has been positively determined relating to the important parts of either. No organ in the human body has excited—in all ages of medical science—more interest, and none have yielded to the inquirer less satisfactory results. It is an extremely difficult organ to investigate, from the fact of its exceeding vascularity, and the great amount of cell, filamentous and liquid products which are constantly being organized, and undergoing in it the processes of morphological transformation and assimilation. It is supplied abundantly with blood by branches of the cœliac axis. Its veins converge, coalesce, and empty their contents into the great portal system which conducts the blood products of the spleen into the liver. The spleen is enveloped in a strong close fibrous membrane of considerable vascularity and elasticity, and intimately adherent externally to the peritoneum, and internally to its parenchyma. This fibrous investment at the hilus of the organ is reflected upon its vessels in all their ramifications, forming an elastic areolar framework which binds together the loose portions of the organ.

From the investing sheaths of the vessels, as well as from the fibrous investment, numerous small fibrous trabeculæ or bands are given off in all directions; these uniting constitute the areolar framework of the organ. This areolar framework is made up of white and yellow elastic fibrous tissue, the latter considerably predominating. What is called the pulp of the spleen occupies the interspaces of the areolar framework.

Its parenchyma consists of a sort of corpus cavernosum, the trabeculæ of which, fibrous in nature, are continuous by their extremities with the fibrous sheaths of the vessels and inner surface of the proper coat of the organ, and in the interspaces is a soft material very closely resembling blood clot, known as the pulp of the spleen. One important fact was early noticed, that the efferent bloodvessels were much larger than the afferent. Another interesting observation was made by Dr. Dobson,[1] that the size of the spleen increased from the third hour after feeding up to the fifth, after which it gradually decreased to its normal quiescent size, which it retained till the next feeding.

Malpighi discovered, in what has been called the "splenic pulp" of the spleen, numerous whitish globular bodies, which have been termed the Malpighian bodies in honour of their discoverer. These were noticed to be attached to the side or at the point of bifurcation of some small artery. They are described as consisting of a closed sac or capsule, containing in its interior a viscid semi-solid mass of cells, cell nuclei, and homogeneous substance. Each Malpighian body has been observed by Kölliker, Burk, Huxley, and others to be penetrated by capillaries, and to be covered on its exterior by a fine capillary network. Leydig regards them as analogous to lymphatic glands, and considers them as really minute lymphatic glands in the spleen.

A very interesting fact with regard to this gland is that it has been entirely removed from dogs, cats, and other animals without its loss producings serious permanent injury. The most constant and permanent effect of its removal is an unusual increase in the appetite; the animals devouring ravenously, and in unusual quantity, any kind of food offered, even that which they would not touch in their normal state.

The food had been noticed to digest well and the animals to increase in weight, the hair becoming unusually sleek and glossy. Another symptom which generally follows the removal of the spleen is an unnatural ferocity of disposition.

From these facts it has been inferred that the spleen is not a single organ, but is associated with other (lymphatic) glands, which may to a greater or less extent perform its functions after its removal. This is believed to be rendered probable from the fact that after the removal of the spleen, the lymphatic glands of the neighbourhood invariably become very

[1] Gray on the Structure and Use of the Spleen. London, 1854. p. 40.

much enlarged and clustered together, so as nearly to equal the original spleen in volume.

Otto Funke, Professor of Physiology at Freiburg, conveys the idea, in his *Atlas of Physiological Chemistry*, that in the splenic pulp, in large cells, the formation of red globules seems to take place by endogenous vegetation.

Kölliker asserts, on the contrary, that these cells are at first nothing more than aggregations of red globules around which a membrane has formed, thus constituting a cell of which these old blood globules become the nuclei, and that they are about to undergo still farther metamorphosis in a retrograde direction. Otto Funke holds that the spleen forms blood disks, while Kölliker, on the contrary, asserts that it destroys them.

C. Morel, Professor at Strasburg, in his recent work on Histology, says the splenic pulp, the substance of which is traversed by the finest vessels and the most delicate trabeculæ, includes elements of different kinds. Its principal bulk consists of cells similar to those of the Malpighian corpuscles, débris of red blood corpuscles, blood pigment, and large cells with many nuclei, $\frac{1}{80}$ of a line in diameter, make up the remainder. He further says, it is a matter of extreme difficulty to determine the relations which exist between the splenic pulp and the larger veins of the organ. Is the pulp entirely outside of the vessels as asserted by some authorities, or are the spaces in which it is contained simply dilatations of the veins, and if this be true, does it form a part of the general circulation? The researches which seem to us most conclusive tend rather to establish the entire independence of the cavities which contain the splenic pulp, yet the fact is not to be accepted as demonstrated. Gray has written at length upon the spleen, and has in his work on this subject many observations that have an interesting and important bearing upon the true structure and functions of this organ, yet without really comprehending its important office, or being aware of the existence of really the most interesting parts of its structure.

Kölliker, in his *Microscopic Anatomy*, pp. 559–60, comes to the conclusion that the spleen appears to be an organ which develops blood corpuscles, and aids perhaps in forming bile. He is also led to believe that the formation of blood corpuscles in the spleen is an abnormal process, as they are not found in the bloodvessels, but in *aneurismatic spurias*.

He further is led to adopt the view that blood disks are disintegrated in the spleen.

Remak thinks that no cells are found in the spleen which contain blood disks, and no blood corpuscles are destroyed in the gland.

Virchow is satisfied of the existence in the spleen of cells containing blood disks. He believes, however, that the blood disks pass from without into existing cells.

Leydig describes a vascular network which penetrates the interior of the Malpighian bodies, and regards these corpuscles as minute lymphatic glands in the spleen.

The foregoing is a brief statement of all, we believe, that is at present positively known and published concerning the minute structure and functions of this interesting organ. I have presented it without any remarks of my own, or any statement connected with the results of my own investigations. From it will be seen the really imperfect and uncertain character of our knowledge of the spleen. From this imperfect knowledge of the organ, it has been inferred :—

1. That the spleen is a glandular organ analogous to other glands of the body that have no excretory ducts, and that it should be classed with the blood glands.

2. That it is the function of the spleen to modify the constitution of the blood, but what this modification is has not yet been determined.[1]

This, without further knowledge of a positive character, conveys but little information which is really useful, as a diagnostic aid in pathological conditions, and throws but small light upon the histology and functions of that organ. Taken, however, with the following investigations connected with its newly-discovered elements and functions, they become highly interesting and valuable.

Investigations to determine the Weight of the Spleen as compared with that of the Body.—1. A robust, healthy female, aged 36, and weighing 135 lbs., who died a few days after the accident of burns on the back and side caused by her clothing taking fire :—

Weight of spleen, which was healthy	2,400 grains
Weight of kidneys	4,890 "

2. In a man, aged about 40, in perfect health and in good condition, shot dead in a recruiting office at Cleveland, Ohio, December 31, 1864, we have the following results :—

Weight of body	160 lbs.
Weight of liver	3 lbs. 2℥ 5℥
Weight of kidneys	10℥ 155 grs.
Weight of spleen	5℥ 25 "

3. Dog, male, was shot while in good condition :—

Weight of body	42 lbs.
Weight of spleen	1,920 grs.
Weight of liver	14,400 "
Weight of kidneys	2,880 "
Weight of testicles	472 "

[1] Brig.-Gen. Hammond, former Surg.-Gen. U. S. A., informs me since this paper was written, that he has an extended series of investigations connected with the spleen in the human subject, and in a great variety of animals, in which much that is new concerning this interesting gland is developed. Not having had the opportunity of seeing his interesting paper and extended illustrations, I regret that I am unable here to refer to the new developments he has made connected with the structure, histology, and functions of this interesting and important organ.

4. Large gray rat, male, good condition :—

Weight of body	15,360 grains
Weight of spleen	120 "
Weight of kidneys	40 "

5. Raccoon (*Procyon lator*), male; killed in January; good condition :—

Weight of body	9½ lbs.
Weight of spleen	297 grains

6. Young game cock, nine months old :—

Weight of body	30,720 grains
Weight of spleen	34.16 "
Weight of kidneys	40.39 "

7. Four game chickens, three months old :—

Weight of the four bodies	46,080 grains
Weight of the four spleens	44 "
Weight of the four livers	1,224 "

8. Snapping turtle (*Chilonuria serpentaria*) :—

Weight of body	32,640 grains
Weight of spleen	88 "

From the foregoing results the weight of the spleen, as compared with that of the body, is as the following numbers :—

Human (female)	1 to 432
Human (male)	1 to 506.72
Dog	1 to 161
Gray rat	1 to 128
Raccoon	1 to 145.6
Young cock	1 to 899
Young game chicken	1 to 1,049
Snapping turtle	1 to 371

Weight of the liver as compared with that of the body :—

Human (male)	1 to 50.57
Dog	1 to 22.4
Four chickens	1 to 37

Weight of the kidneys as compared with that of the body :—

Human (female)	1 to 212
Human (male)	1 to 248
Dog	1 to 112
Rat	1 to 384
Cock	1 to 758½

In proportion to the weight of the body, the spleen is larger in mammals than in birds, reptiles, and fishes.

In mammals the spleen is placed close to the left end of the stomach. In birds, reptiles, and fishes, the spleen is not only smaller, but firmer and more rounded, and is usually in them further removed from the stomach,

and placed in the midst of the mesentery, where it appears to perform, to a considerable extent, in addition to its office in mammals, the functions of a lacteal system.[1]

In such animals the spleen is filled with Malpighian bodies which are plainly visible; while in most mammals, and especially in all such as are well supplied with mesenteric glands, the Malpighian bodies are seldom met with, especially in mature animals, or in the human subject; and when they are found, they are extremely faint in outline. This renders the views of Leydig highly probable that they are really lymphatic glands in the spleen, or, what appears to be more probable, bodies which take the place of the mesenteric or lacteal glands of mammals.

Occasionally an instance is met with in the human subject where the spleen is said to have been found rich in Malpighian bodies; this, however, must be quite unusual, as in all my examinations I never have met with an instance of this kind. It would be interesting in such cases to determine whether the mesenteric glands are not wanting, or abnormal, and to obtain as accurate histories as possible of the digestive peculiarities of the individuals during their healthy existence.

In the human subject, in old age, the spleen not only decreases in weight, but decreases considerably in proportion to the entire body, being as 1 to 700, usually.

In intermittent fever it becomes generally more or less enlarged. In some cases it attains the enormous weight of 18 to 20 lbs.

Structure of Spleen.—The spleen is made up of the following anatomical elements:—

1st. A fibrous tissue forming externally its investing envelope, adherent externally to the peritoneum, and internally to its parenchyma. At the hilus of the organ, it is reflected upon its vessels, and, accompanying them into its interior, forms a sort of capsule of Glisson. This fibrous envelope and capsule sends off bands and bundles of fibres to all parts of the organ, interlacing and uniting with each other and with the arterial trunks, forming numerous trabeculæ and a complete fibrous framework of considerable elasticity, which binds all parts of the spleen securely together.

2d. An artery which divides and subdivides, distributing its numerous large and thick-walled branches to all parts of the organ, and which are securely held in position by fibrous bands and bundles, which inosculate with those of the external arterial walls.

3d. A vein of unusual size formed by branches converging from all parts of the organ, and which forms an important branch of the portal vein.

4th. An extended plexus of thin-walled capillaries which connect the

[1] In birds, reptiles, and fishes, there appears to be but little appearance of a lacteal system, like that of mammals. The mesenteric glands are almost totally wanting.

arterial and venous extremities, and which often, by their divergence and convergence, form ovoid masses or bodies which connect one arterial extremity with the beginning of a venous branch.

5th. *Tubular glandules*, which are the arterial terminations, and which are lined with peculiar glandular cells that form and set at liberty the transparent thin-walled cells from which are developed cells that subsequently become transformed into fibrin filaments. These *tubular glandules* are numerous, and have very thick, strong, and highly elastic walls.

6th. *Oval splenic bodies* (*so-called splenic cells*).

7th. Malpighian bodies, which are connected with the sides, bifurcation of, and extremities of arteries. They are more or less globular in form, and are made up of an external fibrous envelope formed by the expanded external arterial wall, forming a sac, in which are parent glandular cells that organize cells like those developed by the tubular glandules. In addition to this they develop in the human subject, in most other mammals, and in birds, yellow pigment, with rather a reddish tint; and in the reptiliæ and many fishes, a dark-coloured pigment, like that which is seen in the human spleen in the disease known as melanosis. These bodies are connected with the arteries also by capillary vessels, which pass around and abundantly through them.

In a few instances in birds, I have found these bodies terminating a minute arterial extremity, in which case they form a fibrous ovoid head; and are usually smaller than those attached to the sides and bifurcations of arteries. The internal arterial wall subdivides within into numerous radiating capillaries, which pass out of the body in every direction, like the radiating branches of a tree. The Malpighian bodies appear to perform the functions of mesenteric or lacteal glands, and, in addition, organize pigment cells which are usually in mammals of a yellowish or orange colour.

8th. *Amyloid glandules.* These are made up of a meshwork of highly refractive, pearly, capillary vessels, which communicate with the blood stream.

9th. *Nerves and lymphatics.* The lymphatics take their rise from the whole surface of the spleen, and communicate with the thoracic duct. The nerves are derived from the right and left semilunar ganglia and right pneumogastric nerve, and are small and form a slender splenic plexus surrounding the artery and entering the spleen with its branches.

The spleen is remarkable for the size of its artery, which is larger in proportion to the organ than in any other instance. The hepatic artery is rather larger than the splenic in young subjects; but in adults smaller; yet the liver in the latter is from five to seven times the size of the spleen. The splenic arterial branches are also remarkably and universally large, elastic, and thick-walled, when compared with the main trunk, indicating that they are designed for important functions. The arterial terminations are noticed to be lined with a peculiarly thick glandular epithelium, the outside cell wall

of which is more or less doubly fusiform or tapering each way from the centre. In the centre is a large, highly refractive nucleus varying greatly in size and shape, according to the rapidity of the organizing processes going on in the cell. The splenic vein constitutes one of the principal trunks of the portal vein. Although the splenic artery is very large, the splenic vein is still larger. In a child three months old, according to Haller, the artery measured twelve hundredths of an inch, the vein fifteen hundredths.

In a child eighteen months old the numbers were thirteen and nineteen. At three years old, fourteen and twenty-six. According to Sir E. Home, the trunk of the splenic vein compared with that of the artery, when both were filled with wax, is found to be in the proportion of five to one in its size.

Arterial Terminations.—The arterial subdivisions all terminate in one of four ways, viz:—

1. In *tubular glandules* followed by simple capillaries.
2. In tubular glandules followed by the oval splenic bodies (*i*, Pl. I.).
3. In Malpighian bodies (rare) in which the internal coat subdivides into radiating capillaries (*h*, Pl. I.).
4. In capillaries direct without the intervention of tubular glandules.

The most usual termination is in *tubular glandules*, followed by the *oval splenic bodies*. When the arteries terminate in tubular glandules followed by simple capillaries, their walls become very much thickened and highly elastic. This thickening is entirely in the external wall and in the lining epithelium. These terminate suddenly in a blunt oval extremity; while the internal tunic passes on, dividing frequently and forming thin-walled and highly elastic capillaries into which the fibrin cells organized in the tubular glandules pass, and are then partially transformed into filaments before reaching the veins. This is not a common mode of arterial termination. The large nuclei of the parent cells of the epithelial lining of the tubular glandules are exceedingly transparent and highly refractive; so much so, that they are with difficulty traced. These, when carefully examined immediately after death, have either a spherical or oval form, according to the degree of their distension. It is very difficult, however, to trace their true outlines. Their walls are highly elastic. When actively engaged in their functions, they are capable of considerable distension.

The nucleus is usually more plainly visible than the walls of the parent cell. The peculiar function of this epithelium is to organize a large, and at first exceedingly transparent and highly refractive bladder-like cell (*y*, Pl. I.), the envelope of which is so thin, delicate, and pliable, that it has more the appearance of a globule without cell walls than of a cell. It is to all appearance, at first, entirely destitute of any visible contents. Its walls, however, soon become more and more firm, a central nucleus appears which gradually grows more and more evident, and this soon is surrounded

by little globules (which are called granules). We now have before us the colourless corpuscle of the blood (*n*, Pl. I.), or really a *fibrin cell*, or a cell that becomes transformed into filamentous products; for as soon as it enters the extended plexus of elastic thin-walled capillaries, it hugs and sticks to the wall of the vessel, creeping along slowly, and as soon as mature sends out a thin hair-like process which continues to elongate as the cell slowly progresses, and finally is transformed, all but the nucleus, into an exceedingly fine and highly transparent and friable fibrin thread. The central nucleus when it escapes is irregular in outline, with its walls more or less flattened and folded. This takes up hematine and a highly plastic fluid; becomes smooth, highly refractive, and distended, and forms the blood disk.

When the arteries terminate in *tubular glandules* followed by the *oval splenic bodies*, the fibrous coat of the *tubular glandules* suddenly expands into an oval head, or large thin-walled oval sac, which is highly elastic (*i*, Pl. I.). The inside layer of the tubular glandule (*i*) as it enters the oval splenic body, sends off on every side diverging branches, like the radiating branches of a tree, of thin-walled elastic capillaries, which again converge in the farther half of the sac, coalesce with the central main vessel, and form as they leave the *oval splenic* body a venal branch of the splenic vein (*j*, Pl. I.). The fibrin cells which are formed in the tubular glandules (see at *i*, Pl. I.) hug the wall of the main vessel, as they enter the oval splenic body, creeping slowly along, and as they come up with the mouths of the radiating capillary branches,[1] they pass into them, while the red globules and serum keep mostly the centre of the central vessel, and pass directly through the oval splenic body into the venal branch.

The fibrin cells, however, clog up and distend the radiating capillaries, so that the oval splenic bodies, during rapid digestion and organization, become distended, causing the bulk of the spleen to increase.

These fibrin cells, during their slow-creeping passage through these thin-walled vessels, are gradually, after becoming fully mature, spun or developed into fibrin filaments[2] of extreme tenuity and transparency, so that by the

[1] The figure at *e*, Pl. I., gives an approximate, though not a strictly correct idea, of a section of an *oval splenic body*. The divergence and convergence of the capillaries are here represented, though not accurately, as they really lie much more compact, with less interstitial tissue than would appear from the figure. They are placed farther apart than they really occur, for the purpose of giving a better idea of their arrangement.

e' represents an arterial extremity or tubular glandule, and *e''* a venal extremity. The capillaries of the *oval splenic body* are made up of the inner layer of fusiform epithelium of the arterial extremity, and connect it with the lining epithelium of a venal branch.

[2] There has been much scientific experiment and speculation regarding the chemical difference between *albumen* and *fibrin*, and attempts have been made by able chemists to trace by slightly changing the formula, the transition of the for-

time they have reached the veins they enter them as fibrin filaments or as cells far advanced in filamentous metamorphosis.[1] They are now in a condition to move more rapidly, yet they still hug the wall of the vein in the outside stream where they rather creep along than flow.

The capillaries of the oval splenic bodies are so thin and transparent and elastic, and always so filled with cells undergoing metamorphosis, that it is extremely difficult to trace them. When injections are thrown into the spleen the cell products (the so-called splenic pulp) are so adhesive and stick so firmly to the vessels that these thin-walled capillaries are mostly broken down and obliterated.

The fibrin cells, when first set at liberty in the tubular glandules (where they emanate from fusiform epithelial cells possessing the singular property of muscular contractility),[2] are very large, highly transparent (containing no visible contents), readily yielding to pressure, and appear like globules of highly attenuated matter; though they must have thin walls, as it is impossible to make them coalesce or run into each other by pressure. They soon become more and more opaque, a large central nucleus appears in which granules or minute globules soon become evident. This nucleus soon becomes nucleated, the outside cell wall contracts and finally conforms to the large nucleus, at which juncture we have the mature fibrin cell or colourless corpuscle. The cell now takes on a kneading *amœba*-like movement, and finally filamentous development sets in, and the cell is spun into

mer into the latter, and *vice versa*. The truth appears to be from facts unfolded by these investigations, that there really is no chemical difference. That the sole difference is one of condition merely. That fibrin when reduced to perfect solution is albumen, and possesses no longer the property of forming a fibrinous clot. That when cells are formed from albumen and these are developed into filaments, we have a body which will spontaneously clot, and which is genuine fibrin. That fibrin proper is always in a filamentous condition, and that when it loses this condition, as in the chyme of carnivorous animals that feed largely upon fibrin, it becomes albumen. This will more fully appear further on.

[1] The same or a similar process of fibrin cell spinning is constantly going on in the lacteal and lymphatic glands. Hence the reason why the lacteal fluids clot or coagulate after they have passed through a lacteal gland, which property they did not previously possess. Such cells as escape being developed into filaments in these glands constitute what are called colourless corpuscles of the blood. These exist mostly in the outside stream of the blood, where they move slowly along hugging the wall of the vessel with the fibrin.

[2] These parent epithelial cells appear to be the parent muscular fibre or fibrin cells, and which possess singular independent powers of contractility. The same class of cells are largely developed in all the lacteal and lymphatic glands; in the arterial extremities (tubular glandules) of the kidneys, where cells are rapidly developed, and in the arterial extremities (tubular glandules) of the liver where cells are also rapidly formed. This subject will be more fully treated of in another paper on the Minute Anatomy, Histology, and Functions of the Lacteal and Lymphatic Glands and of the Liver and Kidneys.

a fibrin filament of extreme tenuity, setting at liberty the nucleus, with some of the surrounding minute pearly globules or cells. All of these changes take place mostly in the thin-walled capillaries of the *oval splenic bodies* (*i*, Pl. I.) during the slow passage through them of the fibrin cells and their filaments. These processes will be described more in detail further on. The *oval splenic body* figured at *i*, Pl. I., is from the human spleen soon after death. The large fibrin cells, in an advanced stage of development, are faintly seen in this body.

These are active organs of the spleen, and are the bodies that have been described as "*splenic cells and pulp.*" It is impossible to arrive at their real nature and functions without examining the spleen while the animal is still alive and the spleen engaged in its normal organizing processes; for the reason that the cell products organized in the *tubular glandules* pass so rapidly through their several stages of development and metamorphosis in these bodies, that soon after death the cells in process of formation at death have passed through their several stages of development and metamorphosis and disappeared, while there being no nutrient materials for forming new cells the glandular tubules necessarily become empty or only contain cell products in the last stages of transformation. The oval splenic bodies are numerous in the spleen, and constitute the most usual mode by which the arterial extremities communicate with the veins. These bodies are very soft and fragile, being readily broken down between the slides of the microscope, and in minute dissections: on which account the dissections and microscopic manipulations must necessarily be conducted with great patience and caution. Another difficulty exists in the cell products (rapidly undergoing metamorphosis) which distend these bodies and obscure their structure.

At *z*, Pl. I., is represented an epithelial cell from the parent epithelium lining the tubular glandules. The internal layer of this epithelium, when examined *in situ*, seems to consist of oval nuclei which are highly refractive, imbedded in a structureless substance—the walls of the parent cells not being distinguishable in consequence of their extreme paleness. By carefully teasing out this membrane or layer by the aid of fine needles under a magnifyer, the cells may be detached when they are recognized as fusiform in shape (*z*, Pl. I.), with a very prominent bulge opposite the situation of their nuclei.

There are two sets of these cells, an internal (*z*) and external (*z'*). The external is generally regarded as purely muscular—known among histologists as non-striated muscle—permanently remaining in an undeveloped condition; while the internal is regarded as epithelium. The internal cells are arranged longitudinally, while the external are arranged transversely. They differ somewhat in appearance, those of the external layer being more finely granular and regularly fusiform. Both possess singular powers of contractility, like that of the muscular fibre. The cells

of the external layer can be more plainly traced than those of the internal. Both of these layers develop fibrin cells.[1] Filaments of highly attenuated fibrin can be seen at 1, Pl. I., penetrating the walls of the oval splenic body and the venal branch emanating therefrom. Beyond where the vein wall is ruptured, is exhibited at *j* the coiled and twisted meshwork of fibrin filaments that make up a great portion of the outside blood stream in the veins that emanate from the oval splenic bodies. After the majority of the fibrin cells are developed into fibrin filaments these filaments with the fibrin cells not metamorphosed pass on into the veins, where they form a hollow cylindrical tunic hugging the inside wall of the veins and arteries, while inside of this cylinder flows a more liquid stream of blood disks and serum. The central current is very rapid in its movement, requiring but a few seconds for it to perform its round of circulation; while the surrounding cylindrical tunic stream of fibrin filaments and cells moves very slowly, apparently creeping along, hugging the inner wall of the bloodvessels. We have then in the bloodvessels of all parts of the body *two blood streams*, an outside and a central. The outside stream moves slowly and contains the fibrin filaments and cells and other nutrient products for nourishing the tissues, while the inside stream contains but few fibrin filaments and fibrin cells (colourless corpuscles), and moves with rapidity.

When a part is irritated and becomes inflamed, or when there is any lesion resulting in inflammation, there is a tendency for the outside current or nutrient cylinder of fibrin filaments and cells to become thicker and thicker, in proportion to the height of the inflammation, and the central current to become smaller and smaller till the former fills the entire bloodvessel, and the central current is entirely excluded, when there results a fibrin clot choking up the vessel; which condition is often followed by gangrene and sloughing. The central current appears to be essential to the progress in movement of the outside stream.

Arteries terminate in Malpighian Bodies.—This is, strictly speaking, rather an unusual mode of arterial termination in the spleen. Yet it is sometimes met with, and more frequently in birds than in any other animals I have examined. At *h*, Pl. I., is seen a representation of a sample

[1] We call the attention of histologists particularly to these layers of fusiform cells lining the tubular glandules. They exist to some extent throughout the arteries, but nowhere assume the development that they do in the arterial extremities of the glands, and especially of the spleen and lacteal and lymphatic glands. They are highly interesting elements in the process of cell organization. The external layer is known as non-striated muscle, permanently remaining in an undeveloped condition. The fibrin cells developed from the fusiform cells in their passage through the spleen, assume during one stage in their filamentous transformation a strong resemblance to their fusiform parent cell.

of this mode of arterial termination. The outside wall of the tubular glandule (arterial extremity) expands, forming a delicate outer coat of connecting tissue for the Malpighian corpuscle, while the inner tunic of the artery as it enters the Malpighian body, continues to send off diverging capillary branches on every side like the radiating branches of a tree, while the main central trunk of the internal tunic passes directly through the centre. The fibrin cells developed in the tubular glandules hugging the wall of the central vessels, pass into the diverging capillaries as they come up with their mouths; while the red globules and serum maintain for the most part the central channel.

There appears, however, to be no direct communication between the Malpighian tissue and the bloodvessels, save through the thin capillary walls.

The walls of the capillary vessels appear to be made up entirely of the inside layer of fusiform epithelium lining the arteries. These cells are arranged longitudinally, the same as in the arterial extremities, and each is provided with a nucleus which is plainly visible in the capillary wall. The boundaries of these cells are, however, quite indistinct under the best glasses, so closely are their edges blended and united to each other. By carefully teasing out a capillary vessel with fine needles under a magnifyer, occasionally one of these fusiform cells with its contained nucleus may be separated. The epithelial cells possess the peculiar property of transmitting minute bodies under particular states and circumstances. This power of transmission is much greater than is generally supposed. Filamentous fibrin, and even blood disks and the spores of cryptogams, under the proper conditions, freely pass. In acute catarrh, or when the system is under the influence of large doses of iodide of potassium, blood disks without any hematin pass through the capillary walls in large numbers, and flow from the mucous nasal surfaces in the white clear watery serum. This any one with a fair microscope can test for himself.

The spores of cryptogams are found largely throughout the tissues, often, and in the blood and frequently in great abundance in the urine. These spores and blood disks are much greater in diameter than the highly attenuated and transparent filaments of fibrin in the blood.

Amyloid Glandules.—In the spleen are found minute bodies containing a mesh of highly refractive pearly cylindrical capillaries (*f*, Pl. I.). These capillary vessels are readily broken across, fracturing apparently like glass. They are always distended, highly refractive, and of a beautifully pearly lustre. They resemble a meshwork of fine pearl glass tubules. In these vessels may be noticed minute pearly drops, and on the membrane stretched across the meshes, the same kind of pearly drops aggregate into more or less spherical masses (*f'*), and finally these spherical masses of globules appear to melt down and gradually form one or more large globules (*f''*).

These large globules subsequently take on a cell wall, and we have formed the genuine corpora amylaceæ. The cell walls soon begin to fracture around the edges and in the centre, and allow a peculiar refractive highly plastic fluid to escape. After the contents have escaped the cell cases keep on fracturing and finally entirely break up and disappear. They are found in all stages of disintegration in the blood stream. At *g*, Pl. I., is represented a side view of an emptied so-called amyloid cell, and at *g'* an edge view, showing that they are flattened circular cells. They are often marked by concentric rings.

These cells are not amyloid in their character, as has been supposed. They are the true *myaline* cells, or those cells which contain medullary nerve matter. The contents of these cells, after it has escaped from the cases, become aggregated into large globular masses (*k*, Pl. I.), and from the sides of which are developed beautiful, double-walled, pearly, tubular filaments, precisely like those of nerve tissue. These filaments extend and contract over and over again, double up, become beaded, and finally break up into beautiful globules as seen at *m*, and *m'*, Pl. I., which is in every respect analogous to the medullary nerve matter of the brain and spinal cord.

In health, this amyloid matter forms a thin plastic covering to the blood disk, which becomes its vehicle of transmission, which to a certain extent insulates it, and renders it plastic, pearly, and yielding. The amount of this substance investing the blood disks is in direct proportion to the causes exhausting nerve tissue. Its amount present and attached to or in the blood disks, is readily indicated by their plasticity, the readiness with which they yield to every external force, their tendency to stick together, so that, as they separate, filamentous prolongations are drawn out from each, and their little liability to arrange themselves in piles or to become nummulated, and by their pale red pearly hue. The absence of this medullary matter is indicated by the deep red opaque colour of the disks, their rigid nummulated form, the tendency to arrange themselves in piles and want of pliability and plasticity.

By this means those labouring under exhausting nerve influences, such as excessive mental labour, nervous excitement, or exhausting disease, may be readily distinguished from those strong, robust, merely physical persons who trouble themselves little in a mental way about anything.

This interesting and beautiful application of a truth, affords the medical practitioner a simple and valuable diagnostic aid in disease, and points out to us again where the microscope may be of important service to the physician.

In the spleen are developed so-called corpora amylacea. We can no longer hold to the idea of these bodies being at all allied either to starch or cellulose. They are strictly speaking *myaline cells*, and are filled with

medullary nerve matter[1] and contribute to make up what has been denominated globulin of the blood disk.

Virchow discovered that the so-called corpora amylacea (myaline cells), occurred largely in nerve tissue. He found that they existed to the greatest extent and in the greatest numbers in the ependyma of the ventricles and spinal canal, and that they are more abundant the greater the thickness of the ependyma. Whenever from any pathological cause the neuroglia becomes increased, the so-called corpora amylacea (myaline cells) are correspondingly multiplied.

Here we see that Virchow found these bodies intimately connected with nerve tissue.

It is now about thirteen years since Virchow first discovered the peculiar reaction of the corpora amylacea (myaline cells) found in the nervous centres with iodine. These bodies, from this peculiar reaction (iodine striking with these cells a beautiful blue and sometimes a green if albumen is present), have by some been regarded as real starch, and by others analogous to cellulose. Virchow next discovered these cells in a diseased spleen (sagoey spleen) and subsequently they have been found in diseased kidneys and livers, and in diseased tissues.

Virchow regards these amyloid bodies (myaline cells) as more analogous to cellulose than to starch. But from cellulose again they are distinguished by the fact of their becoming coloured blue on the application of a pure solution of *iodine alone*. *Cellulose* behaves precisely like *cholesterine*, which remains colourless when treated with iodine, but on the other hand assumes a blue, or under certain circumstances a red or orange colour upon the addition of iodine and sulphuric acid. Virchow says that amyloid bodies are believed not to occur in the blood. The reverse of this, however, is true. They are very frequently met with in the blood of many persons that I have examined. As they appear in the blood, they are

[1] The matter in the myaline cell (so-called corpora amylacea) which causes them to assume a *blue colour with iodine*, resides wholly in the cell membrane or case. This peculiar substance has given rise to the general opinion that these bodies are amyloid or starchy in their nature. This body is soluble in ether, and crystallizes from the ethereal solution, in beautiful acicular crystals that arrange themselves in a stellate manner, or radiate from a central point.

It resembles seroline somewhat, only the crystals are not as long and slender. It probably is one of the unsaponifiable fats resembling cholesterin and serolin. It is coloured a beautiful blue (ultramarine) with iodine. On account of the peculiar similarity between this body and starch in its deportment with iodine, and out of deference to the term given to the bodies by Virchow, from which it is obtained, I propose for it the name of *Neuro Amyline*.

It has led histologists and physiologists to adopt very erroneous views regarding the character of the so-called *corpora amylacea*, and shows upon what slight grounds grave errors may be made in histological and physiological inquiries.

generally emptied of their contents, merely exhibiting thin, flattened, concentric, usually fractured, highly refractive cases.

These amyloid bodies (myaline cells) are the same as are developed in the spleen. They are the true myaline cells filled with medullary nerve matter. This medullary matter is discharged from the cell cases, which, when they have become emptied of their contents, become fractured in various ways in the centre, and around the edges; and within, appear concentric markings. Their contents is a highly refractive, pearly, viscid matter in the form of globules. Soon after its discharge it begins to change its shape, moving slowly, and finally sends out numerous tubular filaments in various directions, which extend and contract and extend, creeping about in various ways, subsequently breaking up into beautiful globules which appear to be single or double rings (*m*, *x*, and *m'*, Pl. I.). These are taken up by the blood disks which transmit them to their destinations. This matter communicates a high degree of plasticity, and refractive pearly lustre to the disks. This appearance is in direct proportion to the activity of the nervous system. So strongly marked is this, that by simply examining the blood microscopically, it can readily be determined whether a person is actively engaged in mental pursuits, under the influence of nervous exhaustion of any kind, or whether he is purely devoted to physical undertakings, is strong and robust, and is labouring under no influence which is exhausting his nerve tissue.

The contents of these myaline cells perform an important office in communicating plasticity to the walls of the fibrin cells and filaments. Little drops of it are often seen attached to the fibrin filaments after they have become developed from the fibrin cells. These become aggregated and are subsequently developed into filaments, and finally these filaments break up into globules as before described.

The medullary nerve matter, or myaline from the myaline cells, performs the office of surrounding the axis cylinder of the nerves, forming an insulating tunic between it and the nerve sheath, which prevents the nerve force from escaping in its transit save at the terminus. In low typhoid types of disease, this medullary matter is seen in little pearly rings or globules, and in beautiful beaded tubuli often in the blood.

From such experiments as I have made, I am satisfied that cholesterin is found in these cells, and is a constituent of medullary nerve matter. This matter makes up the little pearly globules in mammillated blood disks, or in the blood disks of blood deprived to a greater or less extent of its normal fluid.[1]

Fibrin Cells and Filaments.—In birds, reptiles, and fishes, if the spleen

[1] This condition arises in all states of the system where the fluids of the body are being rapidly appropriated, or carried off, as in nursing females, tobacco chewers, exhausting diarrhœa, in diabetes, in chronic diuresis, and in cases where there is extensive ulceration.

be examined carefully, while the animals are still alive, under a microscope of sufficient power, by one familiar with minute dissections and nice microscopic manipulations, there will be observed plastic, highly transparent cells, which are produced in large numbers in the *tubular glandules*, from the parent fusiform cells of the lining epithelium. These cells at first have no visible contents.[1]

They soon, however, present evidence of having cell walls of considerable firmness, and a large central nucleus becomes faintly visible. Subsequently this nucleus becomes nucleated. The cells gradually become more and more adhesive and plastic, sticking to each other in masses as they enter the diverging capillaries of the oval splenic bodies, clogging them up, so that the cells are retarded in their forward movement.

This clogging up of the vessels causes an expansion of these bodies and a consequent enlargement of the spleen.

At this stage, there is a transparent space between the outside cell wall and that of the nucleated nucleus, which space is free from any perceptible contents. The outside cell wall, which is of extreme tenuity, gradually contracts, so as to soon conform perfectly to the cell wall of the nucleus, thus giving the nucleus a double envelope, and which now becomes the cell, while the former nucleolus becomes the nucleus. At this stage in its development, the cell constitutes what is known as the colourless corpuscle of the blood, but really is a mature *fibrin cell*. Now begins a peculiar filamentous metamorphosis of the *fibrin cell*, by which it is developed into a filament of extreme tenuity and transparency.

As the filaments are developed, the cells slowly progress, and by the time they have reached the venal branches they are either fully developed into filaments or are far advanced in this direction.

Here they meet the central blood current, of blood disks and serum, around which they form, with the undeveloped fibrin cells, a cylindrical tunic, which hugs the walls of the vessels along which they rather creep than flow. During rapid digestion, and immediately following it, the oval splenic bodies become greatly distended with developing cells and the spleen much enlarged. This distension is relieved in about four hours after feeding.

[1] Cells in their early stage of formation in the spleen take on a kind of independent motion, analogous to that exhibited in low protozoon animal organisms, belonging to the so-called *genus Amœba*. Their movements and changes in form belong to the same set of actions; the changeable mass puts forth one or more finger-like prolongations into which the whole body is carried, causing it to change its place. This is immediately followed by prolongations in other directions which in turn expand and receive the entire organism. By this peculiar kneading motion the organisms progress. From this remarkable similarity it would appear, that perhaps forms of the so-called genus Amœba may represent but early stages in the organizations of certain epithelial cell products of animals of a higher type of organization.

The central nucleus of the *fibrin cell* does not become incorporated with the fibrin filament, but is set at liberty with some of the minute pearly globules surrounding it. Others of the pearly globules, or rather minute cells, pass into the tubular fibrin filament during its process of elongation, where they are arranged in single file along the central cavity, forming that peculiar interrupted central structure of an ultimate muscular filament.

The fibrin cells, during their filamentous development, become coated with plastic matter from the *myaline cells*. After the filaments are fully developed, this matter becomes more or less aggregated in little pearly drops along the threads, subsequently (removed from the body) collect together, and are developed into tubular medullary matter (*k* and *l*, Pl. I.). In the live animal, it is no doubt transmitted to its destination before it undergoes filamentous development, or goes to nourish nerve tissue. The blood disks of birds, reptiles, and fishes are peculiar in having a nucleated nucleus. This nucleated nucleus is really a fibrin cell, being, after its escape, one kind of colourless corpuscle of the blood. These fibrin cells, like the fibrin cells of mammals, undergo a filamentous development. This process is beautifully exhibited in the spleen of the turkey and common fowl. As soon as the central nucleus is expelled, the blood disks appear shrunken. They soon, however, absorb more liquid products and hematin, and become again plump and full.

In mammals the mode of formation is essentially the same, but slightly different in some of its details. On account of mammals being less tenacious of life, the examinations cannot be so successfully conducted on the spleen while its normal functions are in progress, as they can on the spleen of the reptilia. With care, however, the cells can be traced through quite all the stages of their formation and metamorphosis. Here we have briefly stated the simple and highly interesting process by which fibrin cells and filaments are formed from the albuminous matters of the blood.

In studying the embryology and successive transformations of the cells of the spleen, those animals the most tenacious of life furnish the best subjects.

The turtle is a good example. The breast-plate can be removed, the animal secured on its back, the spleen exposed, and microscopic examinations continued for hours on this organ while its normal functions are going on.

The successive changes of the cell products of the spleen are so rapid that, in a very short time after death, all of the earlier cell transformations are passed through with, so that nothing is visible save the latter stages in the process and the resultant cell products. On this account, it is impossible to study the early cell morphological processes in the human spleen. If the spleen, however, is examined very soon after death, all of the later cell changes are exhibited.

Birds, fishes, and reptiles, all furnish good subjects for splenic study, and among mammals, dogs, cats, the raccoon, pig, opossum, ox, horse, and sheep are all good examples.

In several instances, I have been able to trace through all their stages the gradual melting down of connective tissue filaments into a plastic, transparent pabulum, and the subsequent formation from this pabulum of first, minute, highly transparent cells (which probably existed in embryo in the filamentous tube) which soon became granular, and, after several hours, had the appearance of highly transparent pus cells. The whole time required for this process was from twelve to eighteen hours. The changes were all gone through with between the slides under the microscope.

Whether this may represent one mode in which pus cells are formed from connective tissue, I am at this stage of the inquiry unable to say. Still, it is quite probable that it may be, and that it is a mode in which filamentous tissues are disintegrated and carried out of the system. In the pabular state they could readily be eliminated.

At Pl. I., *y*, is seen the early appearance of a *fibrin cell* while it is yet in the tubular glandule. At *n* is represented the mature fibrin cell. At *o* it begins to take on the filamentous development, and has projecting posteriorly a fine hair-like process. At *p* is seen a still later stage, when the filament has become enlarged and elongated, and is now discovered to be tubular. At *g* its tubular appearance is more marked, the minute cell contents of the fibrin cell having quite all passed into the filament. At *r* the nucleus is about being liberated, and the filament nearly perfect in its development. At *s* the filament is seen separated from the nucleus, and is perfectly developed. At *t* and *u* are exhibited other forms of the filamentous development of fibrin cells.

Albumen and Fibrin Cells and Filaments.—The albumen of nutrient materials is converted into fibrin in the spleen and lacteal and lymphatic glands by first being organized into fibrin cells. These cells, after undergoing certain changes in character and appearance, are transformed into filaments of fibrin, as previously described.[1] The cells organized from albuminous materials, and which are known as colourless corpuscles of the blood, are here denominated *fibrin cells*, as this name indicates more precisely their real character.

There have been much scientific experiment and speculation regarding the

[1] Mucous cells also undergo filamentous development, and to the highly transparent and loose structured filaments formed from the mucous cells, is the ropy properties of this substance mainly due.

A too rapid and hasty development of these cells in certain diseased states of the body may result in serious pathological states, as in the exudations in angina maligna, in common diphtheria and in scarlatina. The mucous cells in these diseases become fibrinous.

chemical difference between *albumen and fibrin*, and attempts have been made by able chemists to trace, by slightly changing the formula, the transition of the former into the latter, and *vice versa*. The truth appears to be, from facts unfolded in these investigations, that there really is no chemical difference. That the sole difference is one of condition merely. That *fibrin*, when reduced to perfect *solution*, is *albumen*, and possesses no longer the property of forming a fibrinous clot. That when cells are formed from albumen and these are developed into filaments, we have a body which will spontaneously clot, and which is genuine fibrin. That *fibrin* proper is always either in a cellular or filamentous condition, and that when it loses these states by being dissolved, as in the chyme and chyle of carnivorous animals who feed largely upon fibrin, it becomes albumen.

Blood Disks.—The blood disk is a cell proper, with a cell wall, as is made evident by dissolving its hematin and other contents from it, and from the further fact that the blood disks of birds, reptiles, and fishes have a well-defined nucleolated cell nucleus, which subsequently escapes from the disks.

There is still further evidence that blood disks have a cell wall. If the blood disks of birds, reptiles, and fishes be placed in water, it will be found after a little time that the hematin and other products have been dissolved out, save from the nucleus, and the outside cell wall will be found folded and wrinkled, and the nucleus will appear very plain, while the outside cell wall presents itself as a highly transparent, more or less folded and wrinkled disk of extreme tenuity. Further, if the blood disks of mammals be placed in water, it will be found after a time that the cell products have become all dissolved out, leaving the thin membranous walls folded and twisted in various ways, and many of them so collapsed that they appear as mere short irregular beaded lines. Many of them have the appearance of the wrinkled and folded nuclei of the colourless corpuscles which are found abundantly in the spleen, lacteal and lymphatic glands, and thoracic duct.

These statements are made for the reason that some recent physiologists regard the blood disks as homogeneous throughout, they having no cell wall.

In mammals blood disks are formed from the nuclei of fibrin cells. When the fibrin cells are developed into filaments their nuclei are set at liberty, take up nerve and colouring matters, become highly transparent and homogeneous, assume a flattened shape, and form blood disks. This process can be traced through all its stages in the living spleen.

In birds, fishes, and reptiles one form of the fibrin cell makes up the nucleus of the blood disk from which it escapes and is subsequently developed into a fibrin filament. The spleen, and lacteal and lymphatic glands, are the main organs that organize fibrin cells and blood disks.

Of all these glands the spleen is the most important, and the most largely engaged in this cell forming process.

Bodies Resembling Confervoid Filaments.—At Pl. I., *v*, is represented a peculiar kind of filament which occurs abundantly in the spleen. These filaments possess a slight degree of independent motion, which is oscillatory, or a slow, irregular, intermittent, backward and forward motion of the extremities. They are the mature state of the so-called vibriones (*w*). They occur abundantly in the human spleen and in the spleen of all animals, so that their presence is not abnormal.

Their universal presence is indicative that they perform some important function in the animal organic processes. Similar filaments (apparently different species) occur in all the other glands of the body. The glands seem to be the principal habitat of the mature state of these singular bodies. After the death of the animal they are developed in incalculable numbers during the incipient stage of decomposition, and often in the excretions in low types of disease. Their presence in large numbers is indicative of low states of vitality, where rapid interstitial death and decay are in progress, or of the entire absence of vitality and the inauguration of fermentating and decomposing changes. They appear to act especially as a ferment accelerating fermentation and decay, in both animal and vegetable tissues. They are always present in all animals, and only await either low conditions of vitality or its cessation to multiply in vast numbers. By their presence in animal tissues, they are believed to perform an important function in exciting such interstitial changes in effete particles as to reduce dead and useless matter to those states in which it may be readily eliminated. If this should prove as true as at this stage of the inquiry it appears to be, these interesting little bodies are not without their important use in the animal and vegetable economy. In health they are very much less active than in disease, their movements being scarcely perceptible.

These organisms appear to be confervoid in character and mode of development. There is evidence of their being many distinct species, even in the same animal, as they differ somewhat in appearance in the different glands. Those of the same gland in different individuals appear to be, however, quite similar. In structure and movements they resemble the *Oscillaria*. They excite fermentative changes both in animal and vegetable matters. In their early stages of development they are extremely minute and short. They grow by extending in length, and in their early condition appear more plainly jointed than at more advanced stages. These interesting organisms will be treated of more fully in a paper now ready for the press on Fermentation, Gangrene, Decay, &c.

Cholesterin and Serolin and Neuro-Amyline.—In chemical examinations of the spleen this organ has been found[1] to form largely cholesterin

[1] The paper containing the experiments on this subject is not yet published. These experiments decide the point that cholesterin and serolin are developed

and serolin in its organizing processes. Also a beautiful crystalline matter soluble in ether, and probably another unsaponifiable fat, coloured intensely blue with iodine, is formed in the cell cases of the myaline cells. This body we have given the name of *neuro-myaline* for reasons previously stated, in describing the myaline cells and their contents.

Experiments connected with the lacteal and lymphatic glands prove them also to be other sources of the unsaponifiable fats cholesterin and serolin. A careful examination of the substance of the liver has determined the fact that cholesterin and serolin are not formed in the cells of this organ, but simply secreted by the biliary apparatus (the interlobular cells in their organizing processes) from the portal blood coming from the spleen and lacteal system.

These conclusions are the results of experiments as follows: A portion of the spleen was taken immediately after the death of the animal and treated with ether till no more cholesterin and serolin could be obtained. It was then set aside for twenty-four hours, when on again treating the same portion of the spleen with ether an additional quantity of these bodies was obtained, and this gradual formation of these bodies continued till the transformations in the cell products ceased. The lymphatic and lacteal glands were subjected to similar examinations with similar results. On, however, subjecting the liver to this process a very small quantity of cholesterin and serolin was obtained. On re-treating this same portion of the liver with ether twenty-four, forty-eight, and seventy-two hours after, although cell changes had been going on in the liver as they had under similar circumstances in the spleen and lacteal and lymphatic glands, no trace of these bodies could be separated.

These experiments afford proof that the spleen and lacteal and lymphatic glands are true sources of cholesterin and serolin, while the liver is not; the biliary apparatus of this organ merely secreting these bodies from the portal blood.

Fermentation in the Spleen.—When the spleen of the common fowl is set aside, exposed to conditions which induce decay, in connection with the decay which takes place, alcoholic fermentation sets in, which develops *torula cells and filaments* in considerable quantities, producing in a short time a white mould or dust of cells and filaments over the whole surface.

These torula cells are smaller than those developed in fermenting liver, but of the same general character.

These cells are like those which I have frequently met with in the blood of patients labouring under fevers.

The development of these cells in the decaying spleen is an indication of

in the spleen during its organic processes. That cholesterin and neuro-amyline are found in the myaline cells so called (corpora amylacea), the former in the cells and the latter in the cell membranes.

the presence of glycogenic matter or sugar in some form, and which is probably generated by it.

Filamentous Fibrin in the Blood.—The presence of filamentous fibrin in the living blood is rendered evident from the fact that these filaments are formed from fibrin cells, by a regular process of filamentous development, which is constantly going on in the spleen and the lacteal and lymphatic glands. It may be detected in the blood, previous to the process of clotting, as follows:—

Receive a drop of blood as it flows upon a warm (100° F.) glass slide, place thin glass over it, and immediately introduce it under the microscope, with the focus previously arranged, so that the eye rests upon it in less than two seconds after it leaves the bloodvessels.

Three sets of cells and blood disks will at once be noticed. One moves freely in any direction with the current. Another set occurs in little masses and lines, and are more or less stationary, turning the freely movable cells out of their course; while the third are twitching and moving or oscillating backward and forward as if tied together by elastic filaments. The apparently stationary masses and lines of cells and disks, and those oscillating or approaching and receding from each other as if connected by elastic threads, will be found on close examination to be controlled in their motions by fine and highly transparent filaments of fibrin, that are precisely like those that are developed from fibrin cells. Another mode for detecting their presence, previous to the process of clotting, is to prepare a weak alkaline solution, make an incision and receive a fresh drop of blood as it flows upon a warm glass slide with a drop of warm alkaline solution, cover with thin glass, and then press upon the thin glass with a clean folded cloth, which presses out from between the slides the movable disks and most of the alkaline solution, which are absorbed by the cloth. Place under the adjusted microscope, where the eye can rest upon it in less than three seconds after it leaves the blood stream. The fine meshwork of fibrin filaments can now be seen and studied nearly as they exist in the living bloodvessels. They will be seen arranged in a web or meshwork, or in small bundles. Along the course of the filaments are attached the minute granules or cells of the fibrin cells (colourless corpuscles), and attached to the filaments will also be found colourless corpuscles, and many partially disintegrated cells and blood disks.[1]

[1] I am aware that Virchow, and many other investigators of the present day, not having succeeded in tracing satisfactorily the true source of the fibrin of the blood, are leaning towards the opinion that it originates from the fibrinous tissues—is matter in the process of disintegration—is taken up by the lymphatics and transferred to the blood stream, and is to be excreted from the body by the different glands. Bennett, in his work on Clinical Medicine, says: "The effete matters absorbed into the blood circulate with it, and always form an important part of its

This brief statement will be sufficient to guide the inquirer, while he can greatly vary his observations according as his ingenuity may suggest. The more thorough and varied his examinations, the more convincing will be the evidence. The evidence will be made still more satisfactory by carefully tracing the *fibrin cell* from its early stages of development through all its metamorphoses till it finally becomes a filament of fibrin.

The following remarks of Virchow are interesting in this connection:—

"The fibrils of connective tissue only differ from the fibrin of the blood in not being reticulated, but run a parallel course, whilst in other respects they resemble those of fibrin in a high degree. The intercellular substance of connective tissue presents another point of resemblance with fibrin in the great analogy of its behaviour with reagents. When we expose it to the action of dilute acids, the fibres swell up and disappear before our eyes, so that we are no longer able to say where they are. The mass swells up, every interspace disappears, and it looks as if the whole were composed of a perfectly homogeneous substance. If we slowly wash it, and remove again the acid, a fibrous tissue may—if the action of the acid has not been too violent—once more be obtained; after which the previous condition can be produced afresh and changed again at pleasure. This behaviour has hitherto remained unexplained, and for this very reason Reichert's view—that the substance of connective tissue is really homogeneous, and the fibres are only an artificial product or an optical delusion—has something alluring in it. In fibrin, however, the individual fibres can much more distinctly, than is the case with connective tissue, be so completely isolated, that I cannot help saying that I regard the separation into single fibres as really taking place, and not merely as an artificial one, or as a delusion on the part of the observer."

These remarks and quotations of Virchow are highly interesting in this connection, showing that under the influence of dilute acids the fibrillæ of of the muscular and connective tissues, and of the coagulum of the blood, may be rendered invisible to the eye of the observer, and on carefully removing the acid, the fibrillæ again become visible. Reichert's view of the matter, viz., that these fibrillæ are really an optical delusion, and that the material is really homogeneous, has, as Virchow says, something alluring about it, from the fact that it is wholly imaginary. Fresh blood, or the blood in the vessels of the living body, and immediately after it is drawn, has its fibrin in a similar invisible condition, as are the fibrillæ of blood to which dilute acid has been added. This is a point highly interesting, and one presenting strong evidence in favour of the statements and observations set forth in this paper, viz., that the fibrillæ of the fibrin of the blood are developed from cells, and exist as fibrillæ in the living blood, and that coagulation is merely the contraction and aggregation of those fibrillæ, and the rendering of them visible.

Virchow further says:—

"But it is very interesting to observe that the fibrillar stage of fibrin is invariably preceded by a homogeneous one, just as connective tissue originally

composition. It was first maintained by Zimmerman that they constitute the *fibrin of the blood*, which instead of being exuded to form the tissues, as has been generally supposed, is excreted from the body by the different glands."

wears the form of a homogeneous intercellular substance (mucus), from which fibres are only by degrees, if I may so express myself, excreted, or, to employ the usual term, differentiated."

Instead of being differentiated from a homogeneous mucous substance, they are developed from cells in the same way that the fibrin of the blood is developed. See (1) Plate I. Virchow says further: "So fibrin too, which is first of all gelatinous, becomes differentiated into a fibrillar mass."

It is singular that at this age after so much has been done in the embryology of animals, and in that of the various organic elements which compose them, that the views with regard to the development of the various fibrillar tissues of the body should be so at variance with those of other organic elements, and with the development of animal organisms. That fibres should spring "full fledged" from the amorphous fluid mass, is an anomaly in organic development.

Finally, the same author draws the following comparison between the formation of these organic elements and crystallization from inorganic solutions, thus: "And indeed in the case of inorganic substances also, we find certain analogous appearances. From deposits of calcareous salts, or silicic acid, which were originally perfectly gelatinous and amorphous, solid granules and crystals are gradually separated."

Here we have by the ablest of histologists a comparison drawn (after being, no doubt, much puzzled at the peculiar apparent mode of development of the fibrillæ of fibrous tissue) between the formation of organic fibrillæ and the development of crystals and granules, in gelatinuous solutions of calcareous and silicic acid salts. No one would be willing, however, to admit that the formation of organic fibrillæ bears any analogy, in fact, to that of inorganic crystallizations.

At Plate I., *a*, *a*, *a*, are represented parent connective tissue cells, and at *b*, *b*, *c*, *c*, *c*, and *d*, same plate, the nuclei of these cells are seen in all stages of filamentous metamorphosis. The connective tissue cell is developed in connective tissue, which is, in one sense, an extravascular tissue like the epithelial. These cells are unlike any other cells in the animal organism. They have very thin, homogeneous walls, and are usually oval, containing one or more plain homogeneous oval nuclei which are the true connective fibre cells, or the cells which are developed into filaments. These nuclei escape from the parent cells, and undergo the filamentous metamorphosis. These homogeneous cells make homogeneous filaments. It is believed at this stage of the inquiry that the parent cells themselves make elastic fibrous tissue, while the nuclei make the non-elastic.

Clotting of Blood.—The clotting of blood, consists in the gradual contraction and aggregation of the fine fibrin filaments existing in the blood. The peculiar backward and forward motion, or the oscillatory movement of the blood disks, between the slides of the microscope, are produced by this clotting process.

Tendency of the Blood to Coagulate in the Vessels of the Living Body in Disease, and Means of controlling such Tendency.—In many pathological conditions of the system there is a strong tendency in the fibrinous filaments of the blood to contract, aggregate and form in the vessels what we usually call clot. From the simple process before described this tendency of the blood to coagulate in the living system can quite readily be determined, and, after careful practice by the physician, may be used by him as a valuable diagnostic aid. The condition of the blood will indicate, to some extent, the therapeutical management of the case. There appears to be a coagulating tendency of the blood in all inflammatory types of disease, and also in many low typhoid conditions of the system. Wherever this tendency exists, there is a *lax condition* of the muscular fibres, especially those of organic life. This disposition of the fibrin to coagulate, and the lax condition of the muscular fibres, constitute often grave parts of disease, and should be combated with such appropriate remedies as will operate against and counteract these tendencies, or gangrene may result. The alkalies and their vegetable acid salts are known to retard the coagulation of the blood and to thin it by increasing cell elimination. Veratria has a remarkable influence in preserving the arterial condition, and in preventing the coagulation of the blood. (See paper on poisoning with the vegetable alkaloids, published in the Oct. No. of the *American Journal of the Medical Sciences*, 1862.) My experience with this body, however, extends only to its effects in poisonous doses, and to its influence upon blood out of the body. Its effects are, however, so marked that I feel an interest in calling attention to its trial in smaller and more diluted doses than is usually given for combating tendencies to the coagulation of the blood in disease.

I know of no body, in the whole range of our materia medica, so admirably adapted for restoring the normal tonic tone of the muscular fibres, as aconite. It acts speedily and effectually, in giving a strong tonic contractile power to all the muscular fibres of the animal body, and especially to those of organic life. The tonic condition produced by this body is persistent and continuous. It is not intermittent like that of strychnia, picrotoxin, veratria, &c.

Homœopathists use this body in all inflammatory diseases, but without understanding that its beneficial influence in these abnormal conditions arises from its action upon the muscular fibres. The tincture prepared according to the U. S. Dispensary, is a convenient form in which to administer this body. No tincture should be used, unless when on applying a drop to the tongue, it produces a numb, tonic, astringent sensation, in from three to eight minutes after being applied. This sensation should last from two to six hours.

For an adult, about five to six drops of such tincture should be placed in a tumbler of pure water, well stirred, and a tablespoonful given every

twenty minutes, till eight to twelve drops are given. This will be about as much as should be administered in twenty-four hours to a grown person of ordinary strength.

This treatment should not interfere with that ordinarily followed. It is resorted to as an aid, merely, in restoring the muscular fibres to their normal tonic tone, and in preserving the fluidity of the blood, till other appropriate therapeutical means may produce that alterative action required to restore the system to its normal condition.

Iron and quinia are two of our most valuable remedies, in checking the too rapid development of fibrin cells, and their too rapid metamorphosis into filaments. These bodies should be given in liberal doses, often repeated and continued till the blood presents under the microscope a healthy appearance.

Spleen Small in Fœtus and tends to Decrease in Size in Old Age.—It has been observed that the spleen is particularly small in the fœtus, till near the time of pregnancy, when it increases rapidly in size. The functions of this organ, as previously described, explains the reason. The fœtus derives its nourishment from the products organized by the mother, and hence requires of itself no organs for this purpose, till it becomes an independent being. As the period of fœtal maturity approaches, the spleen becomes rapidly enlarged, in order to be fitted as soon as the fœtus is discharged, to organize products for its tissues. In old age, the spleen has been noticed to diminish in size.

This is what we might expect from the fact that the powers of life become feeble in advanced years, and the system requires much less of organized products to sustain it. The spleen hence, having less to do, gradually diminishes in size.

From the Third to the Fifth Hour after Feeding, the Spleen is Increased in Size.—Soon after feeding, and during and following active digestion, cells are organized in the spleen rapidly. During the development and transformation of these cells into filaments, in the tubular glandules, and oval splenic bodies, they distend the vessels of the latter, on which account the spleen is augmented in bulk. As soon as, or soon after rapid digestion is over, cells are organized less rapidly, and the oval splenic bodies are relieved in a measure, in consequence of which the whole organ contracts to its normal bulk. This explains the interesting fact noticed by Sir E. Home, that soon after a meal the spleen becomes enlarged, in which condition it remains for a short time, and then returns again to its normal size.

Large Size of the Bloodvessels of the Spleen.—The important functions of the spleen are explanatory of the very large size of the bloodvessels of this organ. They explain still further why it is, that it is necessary for the splenic vein to be so much larger than the splenic artery. The spleen is essentially an organ engaged in organizing blood products

for replenishing the constant waste in the blood stream, in consequence of which it requires blood not only for its own nourishment, but also nutrient products, from which it may assimilate and organize products for the replenishing of the blood and the support of the fibrinous tissues.

This extra demand requires enlarged means to conduct the desired materials. Much of the blood which enters the splenic artery is in a liquid form; much of the fluid albumen in this liquid becomes organized into fibrin cells in the tubular glandules. These cells are developed into filaments, and these, with the cell products undeveloped, are less readily transmitted through the veins than the liquid products through the arteries. On this account the splenic vein is increased in size above that of the splenic artery, so that these bulky products may be without difficulty transmitted.

Animals deprived of the Spleen have a Ravenous Appetite, and tend to fatten.—The interesting fact has for some time been known that when animals are deprived of the spleen their appetite becomes peculiarly ravenous, they eating much more abundantly than before they were deprived of this organ, and are not as particular about what they eat. The functions of the spleen explain why this is so. The animals being deprived of one of the great and important organs which organize fibrinous materials and blood disks, the other organs (lacteal and lymphatic glands) which perform similar offices, are unable to supply the system with enough fibrinous materials from the same amount of food, as this food is digested in the same time without a spleen as it is with one. To keep up the supply of fibrinous products, it bceomes necessary for the lacteal and lymphatic glands to work more of the time. That beautiful sympathy of action which exists between the wants of the tissues and the organs which supply them with organized nourishment, produces an increased appetite, resulting in more often and thoroughly filling the stomach, so that digestion may continue a greater proportion of the time than is ordinarily required. This enables the lacteal and lymphatic glands, by somewhat overtaxed efforts, to keep up the supply of organized products. The lymphatics become so stimulated to extra exertions that they are gradually increased in size, so as the better to enable them to perform their own normal functions together with those of an absent spleen.

It has also been noticed that animals fatten more rapidly and readily after the removal of the spleen than before. The reason of this is obvious. The organs that produce the majority of the fatty products for the system are not removed, they still being engaged in their normal functions. More nutrient products passing through them than under normal conditions, and these passing more continuously, enable the fat forming glands to organize more fat than usual, to be appropriated. The result is an increased disposition to the formation and deposition of adipose.

Concluding Remarks.—In conclusion, we wish to present some physio-

logical and pathological phenomena, noticed by others, relating to this organ and its diseases, and which are important and interesting in this connection, in the way of corroborating the results which we have arrived at in the study of this gland. On the contrary, our labours will be seen to explain and render clear the observations of others. This remarkable coincidence of reciprocal conformation is confirmatory of accuracy in results; especially is this so since our investigations were completed and the paper nearly written before having noticed the following observations of others:—

Andral, in speaking of the diseases of the spleen, says that "the *splenic cells* are filled with *coagulated fibrin*, which, although it does not possess any distinct organization, yet enjoys perhaps a greater sum of vitality than the fibrous tissue which contains it, and consequently is more prone to become irritated and altered in its nutrition."

The *splenic cells* of Andral are what we have denominated the oval *splenic bodies*, which terminate the *tubular glandules*. The *coagulated fibrin*, he speaks of in the *splenic cells* (oval splenic bodies), is made up of *fibrin cells* (organized by the tubular glandules) undergoing, in the oval splenic bodies, filamentous metamorphosis, or being developed into *fibrin filaments*. These fibrin cells are retained in the diverging capillaries of the oval splenic bodies, mostly until they are transformed into almost inconceivably fine fibrin filaments, when they pass on through the thin-walled capillaries of these bodies, and enter the venal extremities and form the cylindrical tunic which constitutes the outside blood stream.

Andral further states that "a very frequent cause of induration of the spleen appears to be protracted mechanical congestion, as that from disease of the liver, obstructing the circulation through the vena portæ, from disease of the heart, from ague, &c. In induration of the spleen, the concrete blood in the cells is usually dense, so that the viscus cuts and appears like liver.

"Induration is sometimes attended with a deficiency of colouring matter in the concrete blood of the cells. This deficiency may exist, 1st, in detached points, and the organ then presents a beautiful mottled appearance; and, 2d, the discoloration may form masses variable in size, of a reddish-yellow colour, finally becoming pale *like fibrin*, with a structure obscurely granular, occasioned by the moulds of splenic cells. These tumours appear to be nothing more than the fibrin of the blood undergoing changes similar to what we see in the veins."

We can readily see how it is that the fibrin filament, developing from the fibrin cells in the oval splenic bodies, may become interwoven and solidified by any cause, such as congestion from hepatic obstructions, which prevents the free passage of the blood and rapidly-forming blood products through the spleen. We can readily understand how it is that,

under such circumstances, the cut surface of the spleen should assume a mottled appearance at death and for a reasonable time thereafter.[1]

In the oval splenic bodies, where the constantly entering and developing fibrin cells are being transformed into fibrin filaments, we would have a light-coloured mass of almost pure partially organized fibrin and fibrin cells; while in places made up of congested capillaries filled with blood, we would have a red patch of a softer consistence. The obscurely granular appearance arises from the minute cells and globules from the interior of the fibrin cells: a portion of which are set at liberty, and adhere to the filaments of fibrin when these fibrin cells have undergone the filamentous metamorphoses. Enlargement, according to Andral, "depends either on the blood deposited by the arteries not being removed in sufficient quantity by the veins, whence there is enlargement by mere congestion, or the blood being once deposited, and having become endowed with life, acquires the faculty of nourishing itself by intussusception, whence there is enlargement by hypertrophy. Diminution of the spleen depends upon some defect of nutrition."

The peculiar functions of this gland, as set forth in the preceding pages, of organizing fibrin cells and filaments, and other blood products, explains why it is one so subject to enlargement and induration, by any cause, which prevents free circulation through it while its organizing processes are actively going on.

Softening and induration of this organ evidently depend upon a change in the constitution of the blood or coagulated fibrin which fills the splenic cells. In softening, the blood is so thin as to admit of being thoroughly washed out of the cellular parenchyma. Sometimes it is perfectly fluid, and gives an obscure feeling of fluctuation. Softening may be attended with diminution or enlargement of volume—the latter is common after protracted typhoid fevers. Analogy leads us to believe that inflammation may be one of the causes of softening, but a more frequent cause probably is an *alteration of the whole mass of the blood, since it is principally in typhoid fevers, scurvy, &c., that softening is observed.* (Hope's *Princ. and Illust. of Morb. Anat.*) The cause of the change in the blood arises from deranged function of the parent fibrin cells in the arterial extremities. We can readily perceive how it is, that the blood of the body may become thin (deficient in fibrin) as soon as the functions of the spleen are partially or wholly suspended. This being the gland which organizes fibrin more

[1] As an evidence that these are cell products undergoing morphological changes, and are in transit and not connected at all with the elements of the spleen, we here refer to the simple fact that, in a few days after death, even when the spleen is removed from the body at death and preserved carefully in alcohol, these cell products of the so-called *splenic cells* (*oval splenic bodies*) have become entirely transformed into highly transparent filaments, and entirely disappeared. This would not be the case with any fixed organic elements of the organ.

largely than any other, if its functions in this respect be suspended by the blocking up of the tubular glandules and oval splenic bodies with partially organized fibrin, one great source of this product would be cut off from the blood. The fibrin already in the blood would become deposited in the tissues, and one important source being cut off, the blood would become necessarily thin and deficient in fibrin or clot.

Whenever the whole mass of the blood of the body becomes very abnormally thin, we may look to the spleen for the primary lesion; that is, for the obstruction or other derangement of the fibrin manufacturing glandules of this organ.

Alex. Tweedie, in his work on *Diseases of the Digestive, Urinary, and Uterine Organs*, says: "Our ignorance of the function, or functions which the spleen is destined to perform in the animal economy, supersedes any attempt to apply to its diseases the distinction into those that are functional and those that are structural. We may, therefore, turn our attention at once to the structural affections of this organ, including those in which there is simply a disturbance of its circulation, and those in which its nutritive secretion is morbid in respect to the quantity or the quality of its products.

These remarks can no longer be applicable to this gland, since now its functions and structure are perhaps more thoroughly made out than those of any other gland in the human organism. In all those diseases where either the fibrin or red globules of the blood are abnormal in quantity or condition, the pathological lesions or derangement will be better understood, the diagnosis more satisfactory, and the treatment may be reasonably expected to afford more satisfactory results. These subjects will be all considered in detail, in another paper, *On the Pathology, Symptoms, and Treatment of Diseases which are either the Consequence or the Cause of Splenic Lesions.*

Some of the interesting symptoms of diseases of the spleen, as given by Dr. Twedie, are: "*Depression of spirits, torpor of mind, inactivity of body, with much muscular debility; deadly paleness, or a yellowish hue, tending more to black or green than in diseases of the liver; great liability to hemorrhage from various regions of the body, to dropsy, to dysentery, and to ulcers of the legs.*"

The spleen is liable to take on a morbid condition in continued fevers, as well as in intermittents. Diseases of the head, stomach, and liver are liable to be accompanied by diseases of the spleen. *The spleen is more liable to be affected with disease in damp, marshy localities than in other situations. In intermittent fevers there is a diminution of red globules and fibrin. Softening and the breaking down of the spleen is common in intermittent and continued fevers, in scurvy, and in some varieties of malignant dysentery.*

Here we have symptoms and lesions of the spleen concisely stated, which are of great interest and value in this connection. By understanding the true functions of this gland, they are all readily traceable to their true cause. The depression of spirits and torpor of mind may arise from a defective or suppressed organization of nutrient nerve products; inactivity of body and muscular debility from a defective organization and supply of fibrinous materials for the support of the muscular tissue; the yellowish hue, tending to black or green from defective organization, and supply of red globules and their attendant products; the great liability to hemorrhage from various regions of the body, to dropsy, dysentery, &c.; from thinness or thickness of the blood, and a defective supply of its normal products, and a laxness of all the tissues.

The reason why the spleen is so liable to take on a morbid condition in continued fevers, as well as in intermittents, is that the exciting causes of these classes of diseases affect primarily the epithelial tissue, and have a tendency to derange those portions of it most, which are the most actively engaged in organizing nutrient products; the reason of which appears to be that the exciting causes exist alike in the materials we eat, drink, and inhale, and absorb through the skin.

The probable cause of the spleen being more subject to disease in damp marshy localities than in other situations, is that in the former districts miasmatic poisons impregnate more or less the air, the water, and the food. The diminution of fibrin and red globules in the blood of intermittent fevers is caused by a greater or less suppression of the splenic functions in this disease. The so frequent induration, softening, and breaking down of the spleen in intermittent fevers, scurvy, and in some varieties of malignant dysentery, arises from the peculiar functions of the gland and its liability to become deranged in structure and function, when exposed to the malarious and other exciting causes of these diseases.

Leucocytosis.—This is a disease of the lymphatics, and like leukæmia is indicated by an increase above the normal standard of the colourless corpuscles of the blood, and a decrease in the blood disks. It is distinguished from leukæmia by the colourless corpuscles being shrunken, shrivelled, small, and ragged, while in leukæmia they are plump, larger, and more perfectly spherical. In this disease the lymphatic glands are the organs implicated, while in leukæmia the spleen is the suffering part. Both diseases may be either functional or organic. They may occur singly or combined. The microscope alone can settle this question.

These investigations explain the pathology of this disease, as they do that of leukæmia. In another paper on the structure and functions of the lymphatics, it will be shown that these glands are analogous in structure and function to the spleen; the difference being merely that in the former *white blood circulates—while red blood circulates in the latter.* That in the former the tubular glandules are the arterial extremities of the lacteals,

and lymphatics in the lacteal and lymphatic glands. That in these glands these tubular glandules terminate in capillary vessels as in the spleen, and that the arterial capillary and venal vessels of the lymphatics have the same structure as the arteries, capillaries, and veins, that carry red blood.

Leukæmia of Virchow, or Leucocythæmia of Bennett.—This is a disease first carefully studied and named by *Virchow*.[1] It is characterized by a continually augmenting increase in the colourless blood corpuscles, and with this increase a diminution of the coloured blood disks. In the healthy blood there is about one colourless corpuscle to every 300 blood disks. In this disease, the former goes on increasing, and the latter diminishing till the colourless corpuscles equal and often exceed in numbers the red corpuscles. Virchow states that in the histories of all the known cases of the disease, we find it only once as yet recorded that the patient, after he had been for some time the subject of medical treatment, left the hospital considerably improved in health. In all the other cases the result was death.

The cases described present this remarkable peculiarity, that towards the close of life a genuine *hemorrhagic diathesis* is developed, and hemorrhage ensues from the nose and often in the brain and intestinal canal.

Virchow further says that upon investigating whence this curious change in the blood takes its origin, we find in the great majority of cases that it is a certain, definite organ, which presents itself over and over again with convincing constancy as the one essentially diseased; an organ which frequently, even at the outset of the malady, forms the chief object of the complaints and distress of the patients, namely, the *spleen*. In addition, a number of the lymphatic glands are very frequently diseased, but the affection of the spleen stands in the foreground.

The primary seat of this disease hence appears to be the *spleen*.

The symptoms of this disease in this connection are not without interest. They are briefly as follows: increase in colourless corpuscles of the blood and decrease in red globules; enlargement of the spleen; pale, waxy appearance of countenance; lips pallid; cellular tissue soft and pulpy; muscular and nervous debility, and torpor of mind and body. Towards the close of life there is a peculiar tendency to hemorrhage from both mucous and serous surfaces.

The interesting and important glandules and newly-discovered functions of the spleen, as determined by these investigations, throw valuable light upon this disease. The functions of the tubular glandules appear to be over active, while the fibrin cells organized by them are retarded to a greater or less extent in their metamorphosis into fibrin filaments and blood disks; hence results the deficiency in the coloured globules and fibrin, and the

[1] Dr. Bennett, of Edinburgh, has described a case, without naming it, in the Oct. No. 1845, of the Edinburgh Med. and Surg. Journal, which was about six weeks previous to Virchow's description of the disease. This should entitle him to the credit of its discovery.

resulting pale waxy hue and general torpor of mind and body, and the constant increase in the colourless corpuscles as the disease progresses.

Virchow says the spleen is a remarkably sensitive organ, which swells not only in intermittent and typhoid fevers, but also in most other processes in which noxious infectant matters have been freely taken up into the blood.

The spleen is enlarged in melanæmia. In this disease a condition exists somewhat allied with that of leukæmia; since we have in it to deal with elements which, like the colourless corpuscles in leukæmia, make their way from definite organs into the blood and circulate with it. Meckel found that in this disease the spleen was invariably enlarged and pervaded by black pigment, and he therefore ascribes the change in the blood to an absorption of coloured particles from the spleen. The pigmentary matter of this disease is believed to be developed in the spleen. The occurrence of the pigmentary matter in the blood is supposed to be always due to affections of this organ.

I have here briefly thrown together a condensed statement of my labours connected with the spleen, and have introduced only a small portion of the more important illustrations; yet enough, I trust, has been given to convey a tolerably clear idea of the subjects discussed and of the extent of the labours.

ART. II.—*Account of the Epidemic of Yellow Fever which visited Pensacola Navy Yard in the Summer and Autumn of* 1863. By B. F. GIBBS, M. D., Surgeon U. S. N.

IT is not proposed in this article to write an elaborate essay upon a disease which has been known, as a malady most fatal to human life, for a hundred years. To scrutinize facts which have been exposed to the medical public in every manner best suited to determine the hidden mystery of the nature, cause, and treatment of the disease would be equally unprofitable; but it will not be amiss to offer a few facts collected on the field of pestilence, that may help to remove a prejudice or unveil a mystery.

It would be an easy matter to fill many pages with conflicting opinions regarding the origin and character of this dreadful disease. But after steadily probing the obscurities and combining the statements and facts selected from a thousand sources, all have been obliged to rest in the field of research dissatisfied with their incomplete and unsuccessful labours. Not as a theorist, but as a contributor of some observed facts, which I trust will be useful in themselves, as such, I offer the following observations:—

It is necessary to remember that the scene of this epidemic at Pensacola, Fla., was under the most complete military control. No ships entered the

harbour of Pensacola, or moved while in the harbour, neither did individuals pass from point to point without the knowledge of the military or naval authorities. For this reason the history of all those cases which might have been considered isolated was easily obtained, and also whether any connection could be traced from them to the point of infection, or whether intercourse existed between the latter and those neighbourhoods which were healthy.

Origin and Progress.—August 25, 1863, was the warmest day experienced during the period of the epidemic; the thermometer stood at 12 M. at 92° Fahr., and for some days previous to the outbreak of the disease the thermometer approached this high figure. Commodore Wm. Smith called me to go on board the U. S. Store Ship "Relief" and inquire into, and report upon the cause of an unusual amount of sickness from which the whole of this ship's company were suffering at that time. The disease had appeared very suddenly in this form (according to the statement of the assist. surgeon in charge, "in its present severity"), and a general state of alarm prevailed. The ship was recently from Ship Island, a perfectly healthy locality, where she had been used as a store ship for the previous thirteen months. No unusual amount of sickness had prevailed in the ship previously; she had passed the quarantine about two weeks before, and was reported "all well" to the health officer. About three days, however, before I visited the ship the medical officer, Asst. Surgeon Peck, asked my advice in regard to the treatment of some two or three cases of what he called obstinate intermittent fever, and complained that they did not yield to quinia. He increased the dose as I advised him, and reported afterward satisfactorily.

The onset of the disease among those I saw on the morning of the 25th, was of a severe character; reaction slow, imperfect, or entirely wanting, indicative of a low and malignant form of disease. From the condition of the hold of the ship and other circumstances, and for want of a better name, I reported the disease as typhus fever, contagious, and urged an immediate quarantine. At that time, from the symptoms, it was impossible to make the certain and correct diagnosis which I was enabled to do in a few days—the course of the disease deciding the question.

Seventeen of the worst cases, in above thirty affected, I sent to the small hospital in the navy yard, the few cases of casual disease being removed, fearing the spread of disease by contagion, which I conceived to be strong, from the rapid spread of disease in the ship. At the end of five or six days all these cases were convalescent but one, which terminated fatally, exhibiting all the symptoms of yellow fever, including the hemorrhage and black emesis. The treatment of these cases will be given in what follows. It is necessary to remark that these cases were seen immediately, and the active remedies administered were most satisfactory in their results. Of the cases left on board, some of them recovered with a jaundiced skin

and much debility. After the "Relief" was quarantined seven or eight cases on board immediately grew worse, and in six days seven deaths were reported in the ship, including the medical officer, Asst. Surgeon Peck, who stood heroically "in mortal conflict with the destroyer," and yielding his life a sacrifice to humanity, deserves that entire and generous praise, which can scarcely be bestowed on him who falls by the hand of his fellow man in more brutal combat. All these cases were the most decided and very malignant yellow fever.

Sept. 1. The epidemic until this time seemed to have been circumscribed to the "Relief," which was in quarantine six miles distant. The vessels lying adjacent to the yard were perfectly healthy, and we hoped to see no more new cases. Suddenly two of the officers of one of these, a merchant vessel, the "Myrover," were taken and died within three days, having been slightly indisposed two days before the onset of the fatal symptoms.

The vessels of the bomb-flotilla now became more sickly, from one to three cases occurring daily. Fearing almost any disease that was accompanied by fever, I had them all removed to the quarantine, and visited them daily in a steamer.

Although it may be said that this must have been a useless proceeding after those cases had been treated in the hospital and proved to be yellow fever, it will presently appear that the removal of the "Relief," the original point of infection, to quarantine and this flotilla also, secured those in the navy yard, a month after the outbreak, and those first cases were treated from the "Relief" in the yard hospital; showing the feeble power of the disease to reproduce itself at a distance from the point of infection within a month after its appearance. All the men of this bomb-flotilla had been the subjects of malarious poison during their service in the Mississippi River, were then suffering, and were consequently far below the standard of health in vitality. For this reason every one of the flotilla lost many men after the universal spread of the epidemic, notwithstanding our earnest efforts to localize it. It has been said that yellow fever is only an aggravated form of marsh fever, and we know one attack of the former is considered as granting future exemption, while it does not hold good in the latter, although it is a step toward acclimatization. So far as a similarity of the diseases is concerned in bestowing an exemption that would prove an identity, we have no support in the history of these bomb-vessels, for those sufferers from the Mississippi malaria were the most constant victims of yellow fever.

All of the vessels in the harbour were now in strict quarantine five miles distant, and the men belonging to them removed to the shore where they were made comfortable in tents constructed of sails.

22*d.* The first case appeared again in the hospital in the navy yard, which had been thoroughly cleansed and painted since the last case was treated there. The case proved fatal on the succeeding day, with decided

symptoms of the fever. The cases at the Quarantine Hospital were now less malignant, many were convalescent, and no new cases had occurred for several days.

29*th*. A strong wind blew from the north, which lasted three days. The thermometer fell several degrees: we were unable to visit the quarantine across the bay; the wind increased to a sweeping gale; at its close I visited the island, and found all convalescent and no new cases. I removed tents, sent those to their vessels who were well, and removed those much debilitated to a tent for convalescents in the navy yard.

In the mean time, between the 22d and 29th inst., the disease seemed to have localized itself in the navy yard, without spreading to the army encamped only one and a half mile distant. The villages adjacent to the yard contained now and then an unacclimated person who fell a victim to the destroyer. These villages were remarkably clean from the fact that a year previously they had been evacuated and partially burned. The army devoted especial attention to the police of their locality, and enforced absolute quarantine by a double picket line. Several times a week every part of their neighbourhood and encampment was thoroughly cleansed; and situated as it was on a high sand bluff, nature contributed much to secure the soldiers from an invasion of the pestilence. At the close of the epidemic two mild cases were reported. In the navy yard, the marine guard now exhibited a sick list of 25 men; four had died, a number were treated in the hospital, besides the milder cases which were treated in quarters or required no treatment at all. One of the marine officers died and two others recovered after a most critical illness, which left them in a condition wherein their constitutions were terribly broken down: one of these officers recovered after having "black vomit."

Simultaneous with the appearance of the epidemic at Pensacola (August 25), a similar malady invaded the frigate "Colorado," forty miles distant on the blockade off Mobile; seven or eight of the cases died, as I have been informed, of about forty affected. They were unable to trace the disease to any other source than the probable fomites, with cryptogamia, or germs contained in stores received on board, coming from the "Relief," previous to her departure from Ship Island.

Now from the above history of the commencement of the malady there can seem little doubt that the disease was generated in the "Relief." Perhaps it is too positive to point to this locality as anything more than affording proper conditions for generating this poison, or fostering the germs in the same manner as certain protophytes only multiply when lodged on proper soil, as the germ of *Isaria felina* upon the dung of cats, *Puccinia rosæ* upon rose bushes, &c.[1] In the "Relief" we must have had, first, the germ; second, we had the subjects susceptible to its influence;

[1] Carpenter on the Microscope, p. 341.

and third, we most certainly had in the hold of the ship conditions necessary for fostering the germ. This deserves attention as an important point in naval hygiene.

Stores had remained undisturbed in the vessel over a year. During this time several hundred gallons of sperm oil had leaked from the casks into the bilge. The ship made much bilge water, which was exceedingly offensive in its odorous gases, and very black. Kegs of pickles were mouldy or in a state of decomposition; and the fresh preserved meats in cans were unsound to such an extent as to give rise to an animal odour. When I first visited the ship the hatches were all closed, as the offensive odour with them opened was most intolerable. In consequence of these nauseating odours it was impossible for me to but indifferently explore the hold of the ship, and I was glad to again shut up the fomites of the fever under close hatches, with the conditions that gave them birth. Here we had what is usually considered sufficient to generate this disease, viz: heat at over 100° Fahr.; in the hold, salt water, animal matter in a state of decomposition, and the whole stirred up in the ship on the passage from Ship Island to Pensacola. That the disease did not appear earlier in the vessel than near two weeks after reaching Pensacola, may be explained by the fact that it did not feel the influence of sufficient heat until the time stated.

To the filthy condition of the "Relief" we trace the origin and initial point of the pestilence. Whether it was reared in her without the deposit of a germ is not of so much practical importance as to fully understand the fact that the *nidus existed* in her to nourish the fatal malady.

Another fact strictly follows here, which does not disturb those theorists who believe in epidemic germs. We were forcibly impressed with this in observing that when once we had a nucleus in the "Relief," it was not necessary that we should have the same conditions of filth abroad to encourage a spread of disease in the neighbourhood. On the other hand, in the navy yard and on board a few of the vessels in the harbour, cleanliness was most thoroughly observed, and seemed a feeble barrier to the disease. I leave it to those who choose to theorize upon the subject, whether such as suffered under the latter circumstance were the victims of organic zymotic poison carried through the air from ship to ship, or whether a fomites containing the same was carried in the boat or in some manner escaping the scrutiny of the police.

But an excellent illustration of the broad epidemic character of the disease was in the death of a girl in the town of Pensacola, outside of the Union lines, six miles distant and with whom all direct communication from the positive locality of development was impossible. The case was undoubtedly one of yellow fever, as Dr. Brozenham, who has been living and practising there fifty years, gave me the information after the close of the epidemic fever. This case occurred after a more general spread of the disease.

The *symptoms* of this disease have been so often described that it would seem a repetition of no value to do so again. My object in doing so is, that they may be referred to the treatment, which was practised with some success, and that one may be enabled to judge whether this was a mild or severe form of the disease. The usual symptoms of fever occurred in this disease, but they were of a low and severe character. If a novice examines a case accurately, he distinguishes at once the typhoid severity, the mental hebetude, the red or injected eyes, in bad or hospital cases, unlike ordinary fevers. The cold stage or period of invasion was or was not ushered in with alarming symptoms which required the most anxious attention, while our facilities for treating a large number of sick were limited. This stage bore no direct relation to the subsequent fatality of the disease. In this condition the patient had a cold clammy skin, dilatation of the pupils, hebetude, and semi-comatose condition of the brain, often tonic convulsions with severe pains in head and back, which in bad cases were displaced by delirium and all the symptoms of great prostration which rapidly followed. The febrile reaction which succeeded this condition was more perfect in favourable cases. In the worst cases this reaction was always imperfect and in some absolutely wanting. No medication was available unless the fever was well formed. The fever pulse was not more than eighty per minute, and easily compressed, but full. With reaction well established, the skin was hot and dry, and attended with extreme thirst, and pains in the head and back. It might be said that some cases died in the period of invasion without ever reacting; but such as these laboured before, often unconsciously, under a mild form of the disease, which lingered undeveloped until some exciting cause, as a change of temperature, reduced the vital forces, and enthroned the poison of the epidemic more decidedly, so that life yielded to its dissolving influences. The tongue in the febrile condition was coated at first with a white moist coating of a creamy colour, which inclined in a day or two to a brown or mahogany colour. In fatal cases this turned rapidly to a dry black crust, which cracked and allowed the blood to flow during the hemorrhagic tendency. The fever lasted from three to five or eight days; not continued, but intermittent at irregular periods as the powers of life and the violence of the disease varied in their relative intensity. Great determination and fortitude on the part of the patient, with faith in believing he was able to withstand the violence of the disease, was favourable toward continuing the febrile condition, and averted the collapse which was so common at any moment in the course of the disease. Fear of a fatal termination and alarm at the symptoms of adjacent patients were always disastrous, and hastened the fatal issue.

In mild cases the fever ran its course in from one to six days, always leaving a state of great debility, and the skin of an orange hue. The fatal symptoms of bad cases were usually exhibited before the fifth day; in fact

we were in the habit of saying that the patient was in fair way to recover if he survived the fifth day.

There were other symptoms which occurred in the course of the disease that were not present in every case. Among these was the *hemorrhagic tendency*, in which blood flowed from one or all the mucous passages; commonly from the nose, mouth, or eyes; sometimes from the ears and rectum, and more rarely from the penis, or vagina in women. *Black urine* was in our experience a very favourable symptom, more so than the black fluid dejections. All the cases which exhibited this symptom recovered, three of which were having *black vomit* at the time; great emaciation and debility after recovery, with a jaundiced skin for the time, effectually impaired the health to an alarming degree.

The *chemical* and *microscopical* characters of the urine and matters vomited received enough attention to verify or disprove some of the many statements given to the profession in regard to the changes so constantly exhibited. The urine in all the cases was highly albuminous and strongly acid: often the coagulation was spontaneous and the albumen fell a thick mass at the bottom of the urinal; of the true secretion there was little or none; the black vomit was always strongly acid and not infectious. One of the nurses received the whole of the matters vomited in his face, and his mouth being open some entered it, with no fatal consequences, although he suffered subsequently from the fever. The microscope reveals many curious characters in the different morbid productions, when examined in the recent state, but do not lead materially toward determining the true nature of the disease besides exhibiting destruction of tissues. It has been declared that microscopic animals have been discovered in the black vomit. I have examined over a hundred fresh specimens under an instrument magnifying 600 diameters, but have not discovered them. For the purpose of obtaining a wider field I observed many fresh specimens with a less power, and with the same negative result. The matters vomited, as well as the black urine, consist of many heterogeneous parts. Among the most prominent of these, in the above morbid products, were altered blood corpuscles, which might be occasionally distinguished by the dark ring and lighter centre; but a perfect one was seldom seen. There was no regularity among them in the field of the microscope as in the freshly-drawn blood. Large masses of tissue were constantly seen in the matters ejected from the stomach, through which the capillary bloodvessels ramified; also the epithelium of the stomach and fibrinated patches. The larger capillary bloodvessels were sometimes seen with their walls, and blood corpuscles in them, entirely detached from the disorganized tissues. The mucous tissue was exhibited in large quantities, and was readily distinguished by its pavement epithelium. Those peculiar objects observed by microscopists were well marked in the recent matters vomited, or in those specimens in which the dry "vomit" had been moistened. These were oblate-spheroidal

bodies, with dark concentric circles, having opalescent centres or nuclei, and are supposed to be an altered condition of the gastric juice: for what reason I am unable to divine. They are visible under the microscope when dry, but not a tenth of the size of those found in the recent matter vomited. The true nature of these bodies has not been determined. They were constant, and always occurred entangled in the fibrinous matter.

The dark masses found in the vomited matters at every change of the objective field, and which gives the colouring to this matter and to the urine, resembled black wool as the latter appears to the naked eye, and was evidently some carbonized substance, which is ill-defined and its explanation equally obscure. Highly carbonized colouring matter of the bile sometimes assumes a dark colour, perhaps from an excess of purpurine which remains uneliminated by the kidneys.[1] Urine passed later in the history of some cases when the renal secretions were more active we know presented this same black pigment under the microscope, and as we have said was a favourable symptom for the relief of the stomach. Whether or not there was a mutual reaction in this black matter between the stomach and kidneys I am unable to say; but one of the strongest indications in the treatment of the disease in our experience was to re-establish the renal secretion if possible. Whatever this colouring matter may be, whether the poisonous purpurine, hæmaphæin, hæmatosine, melanourine, or a mixture of these in some way, it forms the bulk of the matters ejected from the stomach and gives it the colouring so pathognomonic of the disease.

Treatment and its Results.—If the patient was seen upon the appearance of the first symptom and was strong and previously healthy, a full dose of calomel and jalap was administered: under opposite conditions, ol. ricini was by far the best purgative. The treatment pursued in the cases first sent to the yard hospital from the "Relief," was commenced with calomel and jalap pulv. āā gr. x. This was followed all around by quinia sulph. gr. xx. Of these cases all recovered but one, and they received no medication besides the above. Another case I will venture to record, showing the *treatment*, and which, from its long and critical character, was interesting:—

Lieut. S——, U. S. Marine Corps, was attacked with a severe pain in his head and back, and was given the mercurial purge. After this I gave him quinia sulph. gr. xxx, and watched him carefully in his nursing. His case assumed a lower and more malignant form with intense thirst. Gave him potass. chlor. ʒj, in aq. fʒviij, in which was placed a piece of ice; this was taken *ad lib.* Dry heat was applied steadily by bottles of hot water in a room of an equable temperature. Delirium and the graver symptoms continued to be manifested. Applied ice to his head and continued unremittingly the dry heat. Upon the disposition which appeared to bleed from the nose and mouth he was placed upon the solution of persulphate of iron, gtt. v, every two hours; this remedy acted in this as in many other cases in a manner eminently satisfactory. Upon the discon-

[1] Bird on Urinary Deposits, p. 169.

tinuance of the latter remedy he was placed upon muriatic acid, five drops every three hours until ordered north for recovery.

Whether the quinia, given in this case, at once directed it to a favourable issue by an influence exercised upon the ganglionic centres, I cannot say. But another young officer, more robust in health than the above, surrounded by precisely the same influences, was taken about the same time; he took no quinia, and died. Many other cases might be recorded, in which circumstances prevented the early use of quinia in large doses, which rapidly succumbed to the intensity of the epidemic. We cannot say that by this use of quinia these cases might have been saved, but severe cases recovered in which it was used. That sulph. quinia is not of any use after the violence of the disease is fairly established, I am fully convinced; as an illustration of this there was the case of a citizen, not under my care, however, who took no less than sixty grains of quinia sulph., in divided doses, through the day, but the result was fatal. This patient was then in that condition when delirium had made its appearance, and the sclerotica was densely injected.

Through the course of the disease, ice was most steadily administered, to relieve the great thirst, and with this the beverage of solution of potas. chloras. With the constant application of heat these remedies were certainly useful in the worst cases, but it was necessary to abandon them instantly when the fever abated. Sinapisms to the legs and epigastrium, and blisters to nape of the neck, when the head symptoms threatened, were constantly used. Hot mustard baths, when the apartment was of proper temperature (which could not always be obtained), were very useful. In the application of heat it is most desirable that there should not be a change of temperature of even five degrees. Upon the whole, we found that bags of hot sand and bottles of hot water placed under the blankets were best suited to external stimulation.

Any plan of treatment which does not make heat an important part will fail; even while fever exists it seems beneficial, and excites diaphoresis to the great relief of the patient. In all bad cases we assigned one nurse to each patient; women were employed because more attentive and careful. If by neglect of prescribed measures the skin was allowed to cool, this condition was quickly followed by retching and vomiting, but the renewal of the heat always corrected it, for a time at any rate. Many lives were undoubtedly saved by this plan.

Any hemorrhagic tendency was well treated during the course of the disease by the tr. chloride of iron or solution of persulphate in five drop doses, frequently repeated according to the urgency of the symptoms, and was usually well tolerated by the stomach; if not, enemas were resorted to. Clysters of ol. ricini and ol. terebinth. were used to free the lower bowels. As a stimulating diuretic, turpentine was useful either in shape of the oil internally, or turpentine plasters to back and loins.

Mercurials in this epidemic, except as purgatives, were not indicated, although given with a view of producing a decided effect. In fact, any plan of treatment which was not stimulating, almost from the beginning, was positively injurious.

Muriatic acid as a tonic measure was our chief reliance, and seemed in the whole course of milder cases to be most beneficial; almost every case during some part of its course was under this treatment, and I cannot but believe in its virtue. It was given in as high as ten drop doses every hour, and was well tolerated by the stomach.

To conclude, we have positive evidence that quinia given sufficiently early has a remarkably controlling influence, from the fact that nearly every case that became thoroughly under its influence recovered. We have negative evidence of its value in the fact that the vast majority of fatal cases were not influenced by it, in consequence of the stage of disease when they came under our notice, and very many of them died.

The result of our treatment was eminently satisfactory compared with that in other epidemics, and in consideration of the fact that all these were bad cases; for only the worst cases were sent to the hospital for treatment. We received about 260 cases; 58 deaths of this number were recorded. This is something less than 25 per cent. of deaths, and all of the cases were severe.

Preventive Measures.—Most perfect cleanliness is necessary, although at Pensacola it did not prevent the invasion of the disease when men were suitable subjects. Usual habits should not be departed from, and above all it is most necessary that clothing should be as thick as is compatible with comfort; under clothing should be worn fitting tightly to the skin. The spirit ration or regular stimulation which has become habitual should be continued in moderation. Equable temperature, and a control of all the intellectual faculties, tend to ward off the disease. A firm determination to resist, and forgetfulness of the surrounding pestilence as much as possible, increase the security. The depressing influence of the heat of the sun should be avoided, although recreation is necessary. Cleanliness of person, cool retreats, with agreeable society, add strength to the resisting powers. Negroes are more exempt; some of them were affected so far as to suffer from the head and back pains. Good food, nourishment in variety, and full command of the comforts of life, tend to preserve the health. Medication as a preventive measure is injurious. One attack gives immunity to the disease, as a rule. Quarantine is useful if far distant and absolute. Such in our experience were the measures of greatest value, and I should adhere to them as strictly as possible if called to pass through another epidemic.

Of the *exciting* or *predisposing causes*, we might mention that the measures just enumerated as affording the best chance of escape, if neglected,

act as exciting causes. But changes of temperature are first and strongest. Latent yellow fever, as is the case with miasmatic and other fevers, was influenced by increase of cold. Between Sept. 19th and 22d there was a fall of the thermometer of about 12° Fahr., and fifteen patients died. Between Oct. 6th and 16th there was a reduction of temperature of from 12° to 16° Fahr., and seventeen cases died. Between these periods of time, when the general state of the thermometer was high, an average of about 85° Fahr., there were occasional deaths; but it was only when the temperature was steadily lowered for three or four days in succession that the cases proved rapidly fatal. The epidemic, although it was checked by the fall of the mercury, was more decided and fatal among those already affected. Cases apparently convalescent, upon such changes of temperature, assumed the most violent form, in the same way as fear and anxiety by reducing the nerve force expose the individual.

The totally or partially unacclimated suffered most. I have seen a debauch in several instances to so increase the susceptibilities of individuals that the next morning found them labouring under the disease, although the same persons had been daily exposed for weeks. These cases generally terminated fatally. Sexual excesses favoured an invasion of the disease; a clerk who had escaped during the height of the disease, toward the close of the epidemic became *placée* with a mulatto woman, and was shortly taken with fever and died. All those who contracted the disease in the early history of the epidemic had been within the point of infection, that is, on board the "Relief," from which, at first, the disease was supposed to be contagious. This was subsequently disproved by the broad epidemic character of the disease. For instance, those two cases which occurred in the army that was most absolutely cut off from the point of infection, and the case of the little girl in the town of Pensacola, which was within the enemy's lines six miles distant.

Great fatigue, constant watching, or exhaustive exercise are exciting causes. Physicians, amid the trials of the pestilence, should be careful to observe studied regularity of habit in body and mind; the obverse of this is an exciting cause. The exemption of medical officers during the severity of the disease can only be explained by the fact that we were too much engaged in responsible cares and the scientific interest of each new case to catch the alarm natural to those who avoided the hospital and only were cognizant of an unmitigated state of the disease, as they saw the cart filled with dead bodies in the morning.

I conclude from this experience that yellow fever may originate in a ship when we have heat continued for two weeks at 90° Fahrenheit, and the hold of the ship is filthy.

That we must have three conditions for its propagation, viz: First, subjects susceptible to its influence; second, the germ; and, third, suitable

surroundings, as the filthy hold of a ship, &c., for the germ to thrive and multiply.

That quinia, if used sufficiently early and in large doses, will direct the disease to a favourable termination in many bad cases.

That a reduction of temperature of five degrees during the critical period will destroy the patient.

ART. III.—*Hospital Gangrene, as it occurred at Patterson Park, U. S. General Hospital, Baltimore.* By W. KEMPSTER, M. D., of Syracuse, New York.

HOSPITAL gangrene made its first appearance in the early summer months of 1864, shortly after the arrival of a large number of wounded received from the Army of the Potomac, *via* Washington; the men were necessarily crowded, and there was a lack of medical assistance, consequently it was impossible to bestow that care and attention upon them required in cases of gunshot wounds, especially during hot weather.

It was while the hospital remained in this crowded condition that the disease manifested itself, continuing in a greater or less extent through the entire summer and autumn, again making its appearance in December, four severe cases occurring in that month. In the entire number treated (between forty and fifty), constitutional symptoms presented themselves, in a degree which enabled the medical officers attached to the hospital to form a *prodiagnosis*. Most surgical treatises, and in the reports contained in the *American Journal of the Medical Sciences* for 1865, the constitutional symptoms, if mentioned at all, are regarded as *secondary*, or dependent upon the severity of the local disturbance; such, also, is the idea set forth in Prof. F. H. Hamilton's late work on military surgery. So far as my observation goes, however, this is not the case, all patients presenting the appearances to be described, with variations of intensity, from twelve hours to three days before the local effects are apparent. The first symptoms were usually headache, loss of appetite, general uneasiness, and lassitude; the tongue was often covered with a dirty grayish coat, sometimes it was glazed and dry; the skin was hot, and the perspiration checked; there was also considerable febrile movement; the pulse ranged from 90 to 120; the bowels were constipated, and it was usual for the patient to ascribe his illness to this cause; hence we were sometimes warned of approaching gangrene by a wounded man asking for a dose of physic, at the same time remarking that his head ached, &c. These symptoms increased in severity, until the disease had made its appearance in the wound;

they would then partially subside; the appetite returned, the pulse became fuller and less frequent, and the tongue cleaned up; by the time the local manifestations were subdued, the patients felt improved in health and spirits, but they were much weakened by the attack. The degree of constitutional disturbance was in a measure prognostic; other things being equal, severe prodromes indicated greater intensity of local morbific action; nor did a robust state of health, previous to their disease, warrant immunity from this law; when the symptoms above described were severe in character, and the patient presented a typhoid or adynamic appearance, the prognosis was not favourable to a mild attack, and these views were almost invariably borne out in the result. After this condition had continued for a longer or shorter duration, the disease announced itself locally, first, by causing a cessation of the discharge of pus, and the wound presenting a dry, glazed appearance; this was attended by a sharp gnawing pain, with a sense of tightness, or, as the patient described it, a "drawing sensation;" shortly after, the floor and edges of the wound were covered with the characteristic dirty grayish deposit, and upon the integument near the ulcer vesicles sometimes occurred, containing a thin ichorous fluid. The disease now rapidly attacked the adjacent parts, first destroying the cellular tissue, burrowing under the integument for a distance of from four to six lines; this distance being marked upon the epidermis by a livid areola; the skin was next broken down and destroyed. During this disorganizing process, the temperature of the neighbouring parts was very much elevated, thus undoubtedly causing more active decomposition, and the occurrence of an extremely offensive pungent odour, entirely unlike that caused by putrefaction; indeed it was considered diagnostic. Thus the disease progressed, until arrested by the means employed, or by death, which occurred in but three instances.

In illustration of the above described symptoms I will cite three or four cases; for the notes of two of them I am indebted to Dr. George W. Fay and Dr. Andrew McLetchie, of Baltimore.

CASE I. Levi Ostrander, aged 23, American, private Co. I, 84th Pa. Vols., was wounded June 6, 1864, and was admitted to hospital June 11th. The wound, which was caused by a minie ball, through the right thigh, upper third, anteriorly, was about two and one-half inches long, quite superficial, passing just under the integument, which sloughed in a few days, exposing the track of the ball, at that time covered with healthy granulations; when admitted he was perfectly healthy, of robust constitution, and fat.

June 20. Complained of headache, loss of appetite, and constipation; ordered a cathartic.

21*st*. Patient worse; physic operated once; headache; tongue is thickly coated; pulse 95; did not sleep well during the night; has a dull heavy expression, not unlike that presented by typhoid cases; he is restless; wound not discharging; ordered a mixture of quinia and acid. sulph. aromat. with morphia at night. Low diet.

22*d*. Wound has become gangrenous, and during the night has enlarged nearly an inch, being in all about two inches in diameter; the diseased portions were cut away, and all loose shreds removed; the wound was then thoroughly cleansed, by throwing on a stream of water, with a syringe; the parts were cauterized with strong nitric acid, and dressed with a poultice of pulv. sem. lini, carbo ligni, and resin cerate. He slept a little last night, but feels tired and weak; the symptoms are but little improved. Acid mixture stopped; ordered milk punch, two pints in the twenty-four hours, essence of beef ℥ij every three hours.

23*d*. Disease is not yet arrested; the wound is fully four inches in diameter, and an inch in depth; the integument, cellular and muscular tissues are destroyed; the gangrenous parts were removed, and the wound again cauterized with the acid; dressed as before.

24*th*. Wound is still increasing, it now being six inches in diameter, about one and one-half inches deep, and horribly offensive; it was again freed of sloughing material, and again cauterized, the swab being introduced as far as possible under the flap of integument, caused by the destruction of the cellular tissue; it was then dressed with the following: Unguent. potass. iodid. ℥j, cerat. simpl. ℥j. M. This was applied over every part of the ulcer. The patient feels better; pulse 90; tongue glazed and dry. Bowels regular; he is very weak.

25*th*. Slough has entirely separated, leaving a healthy looking floor and edges; the wound was washed with a weak solution of permanganate of potash. Stopped milk punch at his request, and gave him porter, two pints per day, with a nourishing diet.

From this time the wound improved satisfactorily; it was kept clean by washing it with castile soapsuds, and dressing with oakum; he rapidly improved in strength, and on September 10, 1864, the wound had healed, but the leg was weak.

In this case the constitutional disturbance was severe, and led me to think at one time that it would terminate in typhoid fever; he was full-blooded, temperate, strong, and hearty, but in less than two days he was compelled to keep his bed, which he did not leave for several weeks after the disease was arrested, and during its continuance he required a large amount of stimulus, to overcome the great debility.

CASE II. John Cole, private Co. E, 4th U. S. Cav., aged about 35, American. Admitted to hospital June 11th, 1864; was wounded May 24th, by minie ball, in the anterior part of left thigh, upper third. July 8th, wound of exit entirely healed; wound of entrance nearly so: patient is strong and healthy.

July 10. Complained of headache, loss of appetite, and lassitude. Pulse rapid, tongue furred, perspiration checked, skin hot, febrile movement well marked; ordered a cooling laxative; the wound has taken on inflammatory action; is dry and painful.

12*th*. Well-marked gangrene has appeared in the wound of entrance, and has already destroyed the skin over a space two inches in diameter; the cellular tissue is eaten away for a distance of four lines beneath the integument, which is well marked upon the epidermis by a livid areola; cut away the diseased portion, and cauterized the wound with strong nitric acid; it was dressed with the potassa iodid. ung. Ordered milk punch, two pints in the twenty-four hours, and a nutritious diet.

13*th*. The slough has partially separated, but the wound has not a healthy aspect; reapplied the potass. ung. From this time the wound progressed but slowly, and he did not improve much until

17*th*. Gangrene reappeared on edge of wound; applied the acid to these spots, and continued the potass ointment. The patient is depressed, and thinks he will not recover; the wound is now three inches in diameter; part of the muscular tissue on the floor of the ulcer is destroyed.

23*d*. Wound is in a healthy condition; has continued to improve since last report; patient is very weak but improving. He subsequently recovered.

Here again the constitutional symptoms were well marked at least thirty-six hours previous to the appearance of gangrene, which was persistent; and the same marked depression of physical force was observed as in Case I.

CASE III. Charles G. Edwards, private H, Purnell Legion, was wounded June 18th, 1864, in second toe, left foot. The toe was amputated the day after the wound was received.

July 17. Was called to see him at his residence. He says the wound had nearly healed and he had felt comfortable until within a few days, when he experienced headache, loss of appetite, feverishness, and debility. Gangrene is now well marked, having spread about an inch in each direction. Applied ung. potass. iodid. to the surface of wound. Stimulants to be used freely, and a nourishing diet.

18*th*. The gangrene is still progressing; applied strong nitric acid, and dressed it with the above-mentioned ointment.

20*th*. Gangrene has disappeared save at one small point which was cauterized; patient quite weak.

21*st*. The disease has entirely disappeared; he suffered very little pain; physically he is much improved. Slept well last night which he has not done since the occurrence of the disease; he has some desire for food. He made a rapid recovery.

Another striking case will close the list.

CASE IV. Nelson Hollenbeck, private F, 7th N. Y. Heavy Artillery, was wounded June 3d, 1864; admitted to hospital June 11th. The ball entered the left leg at the junction of the upper and middle third, directly over the spine of the tibia; the bone was not shattered.

June 15. Complained of headache, loss of appetite, and constipation; he was ordered a cathartic.

17*th*. Patient is considerably worse; has a typhoid appearance, save only abdominal symptoms; tongue is thickly coated; pulse feeble and rapid; face flushed; skin hot and dry; has intolerable thirst; he is listless. The wound, which was healing nicely, is dry and painful.

18*th*. Gangrene has made its appearance in the wound; the diseased mass was removed with scissors and forceps; the parts were cauterized with nitric acid, and dressed with a poultice of pulv. sem. lini, carbo ligni, and ol. terebinth.

At this time, owing to the large number of wounded received, I was compelled to forego taking daily notes, and can give but the general treatment, result, &c.

The wound continued to enlarge notwithstanding the treatment, which was changed from time to time until all the remedies usually employed in

such cases had been tried in vain. The acid was resumed, and on August 1st the disease was arrested. He had now a terrible wound, commencing about three inches below the knee; the disease had burrowed on each side of the tibia so as to expose nearly the entire circumference of the shaft for a distance of six inches; two large ulcers formed below the main wound each extending to the bone, so that in reality the wound extended from three inches below the knee to within about three inches of the inner malleolus, and at least two-thirds around the leg, a vast suppurating unhealthy ulcer. The bone was also necrosed.

Throughout this severe attack the patient continued to present the typhoid appearance mentioned above. Milk punch and brandy were freely administered, and concentrated nourishment was given. Muriated tincture of iron was prescribed in liberal doses; diarrhœa supervened, however, and on August 26th death ended his sufferings.

Of the two other deaths mentioned above, in the one case the disease attacked a gunshot wound near the right ankle inside, and was not arrested until the articulation was fully exposed, even the tendo-Achilles and the articular cartilage being destroyed. Some time after the arrest of the disease the foot was amputated, but the patient died two weeks after the operation was performed.

The other case occurred in the month of November, erysipelas attacking the wound after the gangrene had disappeared, to which the patient succumbed. It should be observed that both these patients had severe prodromic symptoms.

The *duration* of the disease in the aggregate was three days; the one prominent exception being Case IV., which occupied forty-two days.

The local *treatment* has already been indicated; the acid answered in all cases; other means were tried, turpentine, bromine, permanganate of potash, Labarraque's solution, sugar, &c., but none of these were as satisfactory or so much relied on as the acid. Great attention was paid to cleansing the parts thoroughly.

Internally tonics and stimulants were given, milk punch, brandy mixture, and porter being chiefly used; the tonic usually given was the muriated tincture of iron. Morphia was given to ease pain and procure sleep. Other indications were met by their appropriate remedies.

The *hygienic* treatment consisted in removing the patients to hospital tents erected for the purpose and situated about 250 yards from the hospital buildings, where they were treated during the continuance of the disease. After its eradication they were not transferred immediately to the hospital wards, but sent to other tents provided especially for this class of patients. All proper precautions were taken to guard against the spread of the disease, each patient being supplied with his own sponge, bowl, and towel; the bandages and other appliances were immediately burned after their removal.

In the disease as thus observed, there are some of its features which present themselves in so strong a light to my mind, and which go so far

towards controverting the idea that this is purely a local disease, that I cannot entirely divest myself of the thought that it is in great measure constitutional. The cases would seem to distinctly indicate this. I repeat, that all the cases exhibited the symptoms described *previous* to the local appearance of the disease; we cannot regard them in the many individuals treated as merely coincident.

The sudden overwhelming of the vital force would indicate a powerful blood poison, and cases are not wanting in which the disease is reported to have appeared, during an epidemic, upon unbroken parts which have not been brought in contact with the debris of a gangrenous wound; the disease first making its appearance in a vesicle, the parts then taking on phagedenic action and being rapidly destroyed—certainly an indication of vitiated blood. Again, crowding seems to offer favourable conditions for its propagation, this fact being commented upon by most of the recent writers on military surgery. In fact, most of the conditions regarded suitable to kindle disease consequent upon blood poison have a direct bearing upon the production of this, thus giving greater force to the probability of its being constitutional. I think that no one is ready to assert that this disease is not most likely to appear first in crowded hospitals. Why crowding *wounded* men together is liable to produce hospital gangrene I am not prepared to say; neither can I answer why crowding healthy men produces a disease known as "crowd poisoning;" but that such is the fact I firmly believe.

It is not many years since diphtheria, cerebro-spinal meningitis, and other diseases having local morbid conditions, were considered local diseases. There are some who regard them so at present, but the majority of the profession, I believe, now class them among constitutional diseases with local manifestations. May it not be thus with this disease?

I am not prepared to say *positively* that hospital gangrene is a constitutional disease, but from my observation of it I must say that my preconceived ideas of its being entirely local in character are very much shaken.

SYRACUSE, N. Y., January 29, 1866.

ART. IV.—*On Ether as a Local Application.* By JOHN J. BLACK, M. D., of Philadelphia.

OUR attention was drawn to this subject by an article in the Quarterly Summary of the number of this Journal for Oct. 1864, p. 523, on the "Pathology and Treatment of Aphthæ." The author of that article, Dr. Jules Worms, whose paper originally appeared in the *Gazette Hebdoma-*

daire, concluded from a minute examination of the deposit on the surface of aphthæ, that it consisted of a fatty matter which is not to be found in any other disease of the mouth, and he inferred from the solubility of the exudation in ether, that this article might prove a useful remedy for the affection. Accordingly he resorted to the application, and with the most beneficial results. This remedial agent removes, he states, "the yellowish secretion, a new epithelium promptly forms, and no trace of the superficial ulcers remains beyond slightly increased vascularity of the mucous membranes."

Prompted by this statement, I determined to give the remedy an extended trial, and I shall now endeavour to show, by the results, that ether locally applied is a most efficient remedy not only in aphthous ulcers but also in most of the other diseases of the mucous membrane of the mouth and adjacent parts, in which, according to the researches of Dr. Worms, the deposits are of a non-fatty nature.

Aphthæ.—We have used the application in several cases of this disease, and invariably found the affection to yield after a few applications, daily repeated. A camel's-hair brush was dipped in ether and applied freely over the parts; it appeared to smart a little at first, but great relief soon followed. This was certainly marked both in character and point of time, in comparison with that obtained by borax and similar preparations.

"*Thrush*."—In this disease above all others we have been pleased with the results of the application. The cases presented themselves in the obstetrical wards of the Philadelphia Hospital, Blockley, which of course were fruitful in that disease—containing so many badly nourished children. It was applied directly to the parts, as in aphthæ, with a camel's-hair brush. At first it produced or seemed to produce a slight difficulty in inspiration, which was soon relieved by a hearty cry of the infant. Of course its presence in the mouth could not have been pleasant, but in no case was it followed by an unpleasant symptom. The deposit was not immediately dissolved, but seemed to disappear gradually, and in most cases after twenty-four hours there was none whatever to be seen, and the one application completed the cure (at least the local cure). In other cases a few spots remained, and if they persisted after another twenty-four hours we repeated the application, and in every instance a cure resulted. These cases were all carefully watched, some of them for several months, and in no case was there the slightest return of the complaint. In from three to four days the mucous membranes became perfectly normal; in the interval from the disappearance of the deposit to this time it presented something of the appearance of erythematous stomatitis without the usual dryness attendant on that affection. Between twenty and thirty cases were treated in this manner, and after the disappearance of the thrush they improved wonderfully. These results tend to strengthen the idea that thrush is a local disease

confined to the mouth, or at least that this part only causes inconvenience, and the constitutional troubles as it were radiate from that centre.

"*Ulcero-Membranous Stomatitis.*"—In this disease we have had the opportunity of testing it in three cases. One supervening upon pleurisy died with extensive sloughing of the parts of the jaw involved. Another recovered without any serious trouble, and seemed to have been greatly benefited by the ether. The third case, more serious, also recovered. Here the parts were apparently in a gangrenous condition, and it only differed from true gangrene of the mouth in commencing in, and being more particularly confined to the gums, without seriously involving the cheek. The sloughs were kept well detached, the parts washed with diluted chlorinated soda, and the ether applied thoroughly morning and evening. A change for the better soon came over the parts, and the patient recovered with the loss of a portion of the alveolar border of the jaw. Of course we combined with this treatment tonics and stimulants to the fullest extent.

The question here arises whether ether might not act beneficially locally applied to true gangrene?

In acute pharyngitis, the sore throat every day met with, we have found it one of the very best applications, in all its stages. We apply it with a camel's-hair brush; at first it stings for a minute or two, and then a pleasant coolness is experienced in the part, giving most marked relief, and patients almost invariably express themselves as feeling greatly benefited. The most noticeable feature in these cases is, the rapid subsidence of the swelling and tumefaction of the parts, and which the patients never fail to notice. In chronic pharyngitis also it produces the same marked relief; and in specific and non-specific ulcerations of the throat, where the patient is much troubled by the accumulations of mucus and the other secretions, we have found the best plan of treatment to consist in washing out the throat well with a mop dipped in a strong alkaline solution which dissipates the mucus, &c., and then applying ether to the parts. In chronic laryngitis we have seen benefit derived from inhaling ether, not of course up to the production of anæsthesia. Here an attempt at its local application proves decidedly irritating.

In diphtheria we have not yet had the opportunity of testing the remedy, but this is the disease in which we have always expected to derive the greatest benefit from it. While we do not consider the mere throat manifestations as the sum and substance of diphtheria, nevertheless it is rational to suppose that these exudations, when swallowed, must tend to poison the system anew, and set up exhausting diarrhœas, &c., and looking at them in this light, it is certainly of the greatest importance to get rid of them. It is also, perhaps, of not less importance to get rid of the mechanical impediment which they offer to the breathing, and also of the swelling, which is so often a serious matter. As before stated, we have not had

the opportunity of testing it in this disease, but my friend, Dr. D. F. Woods, of this city, has kindly reported to me a case in which he used it, and in which he derived from it all the benefits before mentioned. He said it appeared to disperse the membrane, reduced the swelling, and altogether placed the patient in a more comfortable condition. Dr. Woods also reported to me that he had used it often in the ordinary pharyngitis, tonsillitis, &c., frequently combining nitrate of silver with it, and always with the most marked and decided benefit, surpassing in his estimation all other remedies.

It strikes me at the moment that ether might also be useful to cleanse the teeth, gums, and tongue from sordes, and such accumulations in low fevers, and might possibly produce a permanent change for the better in the secreting apparatus there situated.

There is another trouble in which ether must prove a very valuable remedy, although we have not had the opportunity of testing it. We refer to "herpes præputialis," that annoying and troublesome complaint with which some persons are so much afflicted. It would also possibly prove efficacious in many skin affections, such as eczema, psoriasis, &c., the crusts having first been removed with a poultice.

According to Professor Wood, ether has been locally applied to neuralgic pains, earache, superficial burns and scalds, and also to aid in the reduction of strangulated hernia; but in all these cases the cuticle was entire. There are doubtless many other conditions in which ether might be beneficially applied as a local agent, and which will doubtless suggest themselves in practice. There is, however, one more condition in which we must refer to its beneficial action, viz., chronic ulcers. We have not had the opportunity recently of observing it in those troublesome lesions, and here beg leave to express our thanks for the following observations made in the surgical wards of the Philadelphia Hospital, Blockley, by our friend Dr. Charles E. Smith, Jr., resident physician in that institution.

"At the suggestion of Dr. J. J. Black I tried the effects of ether as an application to chronic ulcers in the surgical wards of the Philadelphia Hospital, Blockley. For the first trial I selected ten cases, the ulcers being on the legs, and from one to twelve years' standing; some of them having been partially healed during that time, and had reopened. In seven of these ten cases the sores were covered with a dirty yellowish-white exudation, looking as though melted tallow had been poured over them; two were indolent in character with thickened and everted edges; one was in a sloughing condition. The seven first mentioned healed up rapidly in from two to four weeks, leaving a *very* small cicatrix. The indolent ones improved for a time under the use of the ether, but soon ceased to respond, other remedies seeming to finish what it began. The sloughing one remained as it was, the application seeming to have no effect. The patient died of scurvy. After this I tried it upon three more cases in which the tallow-like exudation was well marked, with the most satisfactory results, they having healed within three weeks. The ether was applied with a camel's-hair

pencil, about one drachm painted on every morning like varnish, nothing else being done for them, except supporting the leg with a bandage. They improved from the first application, granulations of a healthy character sprung up almost immediately, and the ulcers healed rapidly, leaving a very slight cicatrix. In one case in particular in which the ulcers had existed for three years, the skin for several inches around them being of a dirty brown colour, healed as though by magic, and at the end of a month the colouration had almost entirely disappeared. These experiments have led me to the conclusion that in chronic ulcers, in which there is an exudation over the surface looking like a false membrane, the ether causes it to disappear and granulations to spring up, the ulcers healing much sooner than by any other means. In indolent ulcers with raised edges it acts very well for a time as a stimulant, but sooner commences to lose its power. I think the ether acts more decidedly during hot than during cold weather, the ulcers then appearing to respond to it with more certainty."

The ether used in all the foregoing cases was the sulphuric ether, the "Æther," U. S. P.

In regard to the manner in which ether locally applied produces its results, we remark, in the first place, that it is a local stimulus, and appears thoroughly searching and penetrating in its action. Thus then it increases absorption, prevents or dispels congestion, and allows free osmotic action. Again, very probably it changes the nature of the local cell action, which having been turned from its normal channel may thus be driven back to its course. Again, it undoubtedly acts to a great extent chemically. It has been shown by Rokitansky and others that most of these exudative inflammations contain fat, both the mucoid exudative and the fibrinous exudative, the one running into the other, except it be checked. Now the well-known solvent power of ether over fats shows us then that it must act beneficially through its chemical properties. Other chemical changes it doubtless brings about, but of their true nature we are at present unable to determine.

Such then are the results obtained from our short experience in the application of ether as a local remedy, that it is available for much more extended usefulness, we have little doubt; as such then we commend it to the profession, with the full assurance that it will prove a valuable accession to the armamentarium of the physician.

N. B.—It is well to bear in mind when using ether in any manner that great caution must always be observed to prevent the near approach of flame or heat to it, for by neglecting this point serious accidents may arise.

ART. V.—*On Chloroform and Ergot in Obstetric Practice.* By CHARLES C. HILDRETH, M. D., of Zanesville, Ohio.

VERY soon after the introduction of chloroform by Dr. Simpson, I commenced its use; and have formed the following opinions in regard to its value.

1st. That it is a very safe agent in obstetric cases. I have not seen the least approach to danger from its use during labour.

2d. When the case is properly selected, it not only saves the patient a vast deal of suffering, but very much shortens the duration of labour.

3d. By tranquillizing the nervous system, diminishing shock, and sustaining the vital energies, chloroform secures the patient a far better recovery after labour.

4th. I have found chloroform very valuable in all instrumental deliveries and operations; in puerperal convulsions, by whatever cause induced; and in all cases of version. But the chief value of chloroform is in tedious, lingering labour, arising from rigid, undilatable os uteri, and accompanied by too feeble or excessively painful contractions. In such a case, chloroform acts like a charm. Under its influence, the rigid os uteri becomes soft and pliant, the mucous follicles of the uterus and vagina pour out their secretions in abundance, and labour progresses rapidly. Obstetrical authorities advise us, in nearly all cases, to leave the membranes intact until the os uteri is fully dilated. With the patient under chloroform, I am confident this advice may in many cases be disregarded with perfect safety to both mother and child. It has been my practice in cases of lingering labour to administer chloroform, rupture the membranes, and discharge the waters freely. By this practice, we add very much to the energy and efficiency of the uterine contractions. An over-distended bladder is nearly paralyzed, and cannot contract, until part of its contents is removed by the catheter. So often we find the uterine muscular fibre so over-distended that its contractions are almost powerless. As the last pains of labour are usually the strongest, simply because part of the uterine contents are expelled; so the first pains are rendered more efficient, by diminishing the capacity of the organ. The patient under chloroform, and the waters discharged, if the os uteri does not dilate easily, I have found the occiput of the child, and the well lubricated fingers of the accoucheur carefully applied, as safe and much more efficient dilating instruments than the bag of waters.

That the danger to both mother and child, from early rupture of the membranes, is very much exaggerated, I have not a shadow of doubt. It is quite a common occurrence to find the waters break naturally, days, or even weeks, before active pains come on, and yet such labours generally do well. So also, in rupture of the membranes, at the seventh or eighth

month, in cases of deformity, or exhaustion, or hemorrhage, we usually find such labours terminate successfully.

Dr. Blundel, in his excellent work on Midwifery, takes frequent occasion to remind his reader that "meddlesome midwifery is bad." So indeed it is, in natural labour, which progresses fairly and satisfactorily. So long as nature is doing well her work, it is no doubt bad practice to interfere; nor will any good accoucheur advise it. But if "meddlesome midwifery is bad" in perfectly natural labour, the "trust to nature" practice is much worse, in cases requiring obstetrical assistance. In looking over the statistics of lying-in hospitals, we are at once struck with the fearful rate of mortality to both mother and child, when the duration of labour exceeds by a certain number of hours the natural period. There is a point of endurance of suffering beyond which nature will succumb unless relieved.

In lingering labour from any cause, I am well convinced, the rate of mortality to both mother and child will be much diminished by the use of chloroform, the early rupture of membranes and discharge of waters, by the artificial dilatation of the os when required, and by the use of ergot or other uterine stimulant when pains are inefficient. Dr. Tyler Smith expresses my sentiments in saying, "I believe in the present day more mischief is caused from a kind of fear of the uterus, and of interfering with its natural action, than from bold and intelligent efforts to guide and control it."

Chloroform and ergot in obstetric practice are antagonistic powers. The one diminishes uterine contraction, the other increases it. Knowing this fact, we often give ergot in lingering labour with inefficient pains, much earlier than we would consider safe without the use of chloroform.

If ergot acts too energetically for the safety of the child, it is very easy to control such action by chloroform. If chloroform suspends uterine contraction almost entirely, it is readily aroused again by ergot. The skilful practitioner, by the judicious application of these two remedies, cannot fail to alleviate much suffering, as well as to diminish very much the duration of labour.

Having said so much in favour of chloroform, allow me to state one very serious objection to its use in obstetric practice. Chloroform most certainly predisposes our patients to post-partum hemorrhage. Theoretically, we would anticipate such a result; practically, we are assured of the fact. We have in ergot, fortunately, an almost certain preventive of such a catastrophe. When, therefore, chloroform is given in the latter stage of labour, the accoucheur has not done his whole duty to his patient, unless he also gives an efficient dose of ergot before the child is born or the placenta delivered.

Ergot, when given in labour without the use of chloroform, requires careful and skilful management. Most authors condemn the use of ergot

in first labours. They tell us that it seriously endangers the life of the child, as well as the external soft parts of the mother. No doubt the authorities are right on this subject, and yet there are cases of first labours when ergot can be given with safety and benefit. By a careful regulation of the dose of ergot, we attain two very different results. A small dose repeated at intervals of fifteen to twenty minutes, will soon increase the frequency and energy of the uterine contractions, or bring them up to the natural standard. A large dose given at once, will often induce a continuous rigid spasm of the uterus, which in first labours without chloroform so often destroys the life of the child by interfering with the placental and fœtal circulation. In practice, I have found almost all the preparations of ergot efficient, but for convenience prefer the tincture. Of this preparation, I consider one-half drachm a minimum dose, when we merely wish to stimulate the uterus to increased efforts. As a maximum dose, two drachms never fail in my hands to induce contractions, sometimes so powerful as to require the use of chloroform to restrain them.

Thus, by a skilful regulation of the dose of ergot, and of the interval at which it is given, we may obtain almost any desired form and frequency of uterine action.

Although ergot is our most valuable and efficient remedy for feeble uterine action, yet we obtain decided results of a similar character, from borax and cimicifuga. From my experiments with borax, I have formed the opinion that it has no influence in originating uterine contraction, but if regular pains are present, they will be increased in force and frequency by half-drachm doses of the medicine once or twice repeated. The action of borax is much more mild than that of ergot. It does not induce the rigid continuous uterine spasm produced by a large dose of ergot, and hence can be given in first labours with much less danger to both child and mother.

I have found the cimicifuga also a mild but decided stimulant to the uterine muscles when once in action. Equal parts of tinct. ergot and tinct. cimicifuga make a very valuable and safe combination in practice. So also a solution of borax in decoction of cimicifuga will be found a fair substitute for ergot in certain cases. As a dilating remedy for rigid os uteri, I have found nothing equal to chloroform by inhalation. Belladonna locally applied, no doubt has a decided influence in relaxing rigidity; but is too uncertain, and perhaps too poisonous for general use. The lancet, and various nauseating remedies, have also had their advocates. One of my medical friends informs me that he relaxes rigid os uteri by administering by the stomach a drachm of chloroform in a glass of whiskey and water. From the few cases in which I have tested this practice, I have formed the opinion that the relaxing power of the remedy will be measured by the degree of intoxication produced.

In conclusion, allow me to state that a more general use of ergot in the

last stage of labour will tend to prevent many of the diseases of the puerperal state. By the proper dose of ergot, we secure a firm contraction of the uterus. This prevents hemorrhage and violent after-pains from retained clot. The presence of coagula not only induces pain and tenderness, but also predisposes to metritis, peritonitis, phlegmasia dolens, and purulent absorption, or pyemia. These are some of the natural sequelæ of uncontracted uterus and post-partum hemorrhage, and they will be found to follow much the most frequently labours in which ergot has not been given. Practically, I am convinced of the fact that the mortality of the puerperal state would be much diminished, and the future health and comfort of our patients much improved, if it were the custom of physicians in every case of labour to give a full dose of ergot (if not before the birth of the child), invariably before the delivering of the placenta.

ART. VI.—*Remarks concerning some of the Diseases prevailing among the Freedpeople in the District of Columbia (Bureau Refugees, Freedmen, and Abandoned Lands).* By ROBERT REYBURN, M. D., Surgeon U. S. Vols.

THE appended Report, which gives the results of the treatment of seven thousand nine hundred and forty-nine (7949) cases of sick and wounded freedmen, who were under medical treatment in District of Columbia, Bureau of Refugees, Freedmen, and Abandoned Lands, from June 1, 1865, to December 31, 1865, has developed some interesting facts relative to the diseases prevalent among them, to which we desire to call the attention of the medical profession.

This report does not embrace *all* who were under treatment during the above months, but only those cases that were recorded and the results known.

This district Bureau of R. F. and A. L. embraces the city of Washington and the District of Columbia, properly so-called, the three counties of Alexandria, Fairfax, and Loudon, Va., and a part of St. Mary's Co., Md., together with a general supervision of freedmen's affairs in the whole State of Maryland. The total number of freedpeople who are more immediately under the charge of the Medical Department of this district, is, from a census taken by order of the Bureau, and which is now nearly completed, about fifty thousand; of these somewhat over fifty-two per cent. are full blood Africans, and the remaining forty-eight per cent. belong to the mixed races.

Out of the total number as above stated, three hundred and forty-six deaths are recorded, being about forty-three per thousand of those under treatment. This mortality is larger than exists at the present time in this district, and arises from the fact that the greater number of these cases were treated in hospital, and as only the more severe class of cases are sent to hospital, the mortality is larger than the average mortality of the cases treated in hospital and at their homes. Our mortality has been for the last three months about thirty-three per thousand of the number of cases under treatment, and is now diminishing rather than increasing in amount.

The first and most fatal class of cases (although not the most numerous) in the report is that of typhoid fever. The number of cases of this disease was one hundred and sixteen, and the number of deaths was forty-nine, or nearly forty-one per cent. of the number of cases treated. The post-mortem examinations made in the fatal cases presented the usual abdominal lesions characteristic of typhoid fever, and the only point of difference observable was that the pulmonary and cerebral inflammations which so frequently complicate this disease, and add to its dangers, were found to present a more asthenic type, and consequently were found to be more dangerous in their results than is commonly the case with typhoid fever occurring among whites. The pneumonia which we find so often in cases of typhoid fever occurring in the Caucasian race, in the negro becomes pleuro-pneumonia of a low grade, and is generally accompanied with a large amount of serous or sero-sanguineous fluid, which after death is found filling the cavities of the pleuræ. In fact, as a rule, inflammations of the serous membranes seem to be much more frequent and dangerous among negroes than whites, and it is rarely we have examined a negro cadaver which did not present evidences of recent serous inflammations in either the thorax, abdomen, or calvarium. The same condition above mentioned has been found by other observers, and we have been informed by Dr. Ira Russell (late Brevet Lieut.-Col. and Surgeon U. S. Vols.) that he has hardly ever opened a negro cadaver in which there was not a large amount of serous exudation. The observations of Dr. Russell on this point are deserving of especial weight on account of his having made the diseases and pathology of the negro race a speciality, and from his having assisted in making a large number of post-mortems of freedpeople while on duty in the west during the war. It may, however, be objected that in some of the above cases the effusion may have been post-mortem, but we feel convinced that such was not the case, for the following reasons, viz:—

1st. In many of these cases percussion revealed the existence of the effusion during life; and secondly, the amount of effusion was generally so great as to entirely preclude the idea of accounting for it by any mechanical transudation of the serum of the blood through the walls of the blood-vessels after death.

The next class of diseases worthy of notice is that comprising the various

forms of remittent and intermittent fevers. The total number of cases belonging to this class was two thousand seven hundred and seventy-six, or about 35 per cent. of the total under treatment. This significant fact is, we believe, a sufficient answer to, and refutation of, the statement so often reiterated in our text-books that the negro race are not subject to and do not suffer from malarious diseases.

Now, it may be that in Africa, and in the West Indies, they do not suffer to the same extent as unacclimated whites do, but they certainly are not exempt from these diseases in this country; and as far as our own opinion goes, we are strongly inclined to the belief that this so-called exemption has no foundation in fact, and is unworthy of credence.

In order to show that the large number of cases of intermittent and remittent fevers occurring among the freedpeople of this district is not owing to the influence of temporary or local causes, we are permitted (through the courtesy of Surgeon C. W. Hornor, U. S. Vols., Chief Medical Officer of Bureau Refugees, Freedmen, and Abandoned Lands) to give a few extracts from the official reports received from other districts of this Bureau, which will, we think, confirm and strengthen our assertions.

The official monthly report for September, 1865, of the Surgeon-in-Chief of the District of South Carolina (Bureau R. F. and A. L.) for the cities of Charlestown, Beaufort, and Combahee Ferry, and St. Helena Island, is now before us, and from it we extract the following:—

"The total number of sick freedpeople under treatment during the month was one thousand and ninety-six, and the number of cases of the above mentioned diseases was three hundred and ninety-seven, or about 40 per cent. of the total under treatment."

From a like official report for October, 1865, from the district of Virginia, Bureau R. F. & A. L. for the cities of Yorktown, Petersburg, Hampton, and Eastville, we find the following figures, viz:—

"The total number of sick freedmen under treatment during the month was seven hundred and eighty-eight, and the number of cases of malarious diseases was four hundred and forty-one, or nearly fifty-six per cent. of the total number under treatment."

From a similar report for the month of October, 1865, from the district of Georgia (Bureau R. F. and A. L.), and for the cities of Macon, Savannah, and Augusta, we extract the following:—

"The number of sick freedmen under treatment during the month was five hundred and eleven, and the number of cases of the above diseases was one hundred and sixty-seven, or nearly 33 per cent. of the total number under treatment."

We might continue to make extracts similar to the above to an indefinite extent, but we think it to be unnecessary, as all the reports we have seen, and we have consulted a large number, with especial reference to this point, give uniformly the same result.

The next and last class of diseases to which we will here advert is the tubercular; this includes consumption, what is usually denominated scrofula, and all the other varied forms in which the tubercular diathesis manifests itself.

The total number of cases belonging to this class was two hundred and ninety, or nearly four per cent. of the total number of cases treated. This result is somewhat striking, and is diametrically at variance with the extraordinary statements which have been made by some of our medical authors and teachers, and which are to the effect that scrofula (in some form) is almost universally prevalent among the negroes and mulattoes in northern latitudes.

Now, it is undoubtedly true that when the negroes and mixed races are exposed for a lengthened period to the combined evil influences of improper nourishment, insufficient clothing, impure air, and uncleanliness, that they are the victims of the various forms of scrofulous disease; but where well fed and clothed, and subjected to favourable hygienic influences, we are fully persuaded that such is not the case; and we believe that the statements above referred to are entirely mistaken and erroneous. As a proof of this we may cite the fact, that the same causes which produce and perpetuate scrofula among the coloured people, may be seen (to a limited extent) in operation among the poorer classes of white people in many of the larger cities of the Union, and produce among them precisely similar results; in other words, we believe that scrofula is nothing more than the effect produced upon the human system by unfavourable hygienic influences, and any of the races of men will suffer from it in exact proportion as they are subjected to these deleterious conditions.

In this District Bureau of R. F. and A. L. there are now three hospitals open, and eleven physicians employed by the Bureau, who attend them both at the hospitals and at their homes. The number of patients under treatment during each month has ranged from eighteen hundred to two thousand for some months past, and if scrofula occurred as frequently among them as has been represented, we think we would have had fair opportunities for observing it. There are many other points of interest connected with the diseases of the freedpeople, on which we might dwell, but the amount of space we have allotted to ourselves in this hasty sketch will not permit us to do so at this time.

Consolidated Report of Sick and Wounded Freedmen in the District of Columbia. Bureau of Refugees, Freedmen, and Abandoned Lands, from June to December, 1865 (inclusive).

Tabular list of diseases.	No. of cases.	No. of deaths.
CLASS I.—ZYMOTIC DISEASES.		
Order 1. MIASMATIC DISEASES.		
Typhoid fever	116	49
Typhus fever	4	2
Typho-malarial fever	19	4
Remittent fever	588	20
Quotidian intermittent fever	1096	1
Tertian intermittent fever	981	5
Quartan intermittent fever	74	5
Congestive intermittent fever	37	13
Acute diarrhœa	710	41
Chronic diarrhœa	378	33
Acute dysentery	139	5
Chronic dysentery	70	8
Erysipelas	44	1
Smallpox	54	
Varioloid	6	
Measles	165	5
Scarlet fever	9	1
Diphtheria	34	5
Mumps	31	
Epidemic catarrh	15	
Debility from miasmatic diseases	44	6
Other diseases of this order	4	
Order 2. ENTHETIC DISEASES.		
Syphilis	251	1
Gonorrhœa	77	
Orchitis (gonorrhœal)	14	
Purulent ophthalmia	11	
Order 3. DIETETIC DISEASES.		
Scurvy	20	
Delirium tremens	1	1
Other diseases of this order	5	
CLASS II.—CONSTITUTIONAL DISEASES.		
Order 1. DIATHETIC DISEASES.		
Gout	1	
Acute rheumatism	134	1
Chronic rheumatism	174	3
Cancer	12	
Tumours	3	
Dry gangrene	2	
Other diseases of this order	1	
Order 2. TUBERCULAR DISEASES.		
Consumption	139	36
Scrofula	148	4
Other diseases of this order	3	1
CLASS III.—PARASITIC DISEASES.		
Itch	66	
Intestinal worms	48	

Tabular list of diseases.	No. of cases.	No. of deaths.
CLASS IV.—LOCAL DISEASES.		
Order 1. DISEASES OF THE NERVOUS SYSTEM.		
Apoplexy (cerebral)	4	1
Epilepsy	19	1
Headache	103	
Insanity	10	
Inflammation of the brain	15	4
" " spinal cord	3	
Neuralgia	107	
Paralysis	23	6
Sunstroke	8	1
Tetanus	6	
Order 2. DISEASES OF THE EYE.		
Amaurosis	8	
Inflammation of the conjunctiva	61	
Inflammation of the iris	2	
Order 3. DISEASES OF THE EAR.		
Deafness	2	
Inflammation of the internal ear	2	
Otorrhœa	14	
Order 4. DISEASES OF ORGANS OF CIRCULATION.		
Aneurism—hypertrophy heart	1	1
Chronic valvular dis. of heart	10	4
Dropsy from heart disease	13	1
Dropsy of the pericardium	1	
Inflam'tion of the pericardium	1	1
Varicose veins	6	
Varicocele	3	
Order 5. DISEASES OF RESPIRATORY ORGANS.		
Asthma	19	
Acute bronchitis	167	3
Chronic bronchitis	43	1
Dropsy of the chest	2	
Epistaxis	10	
Inflammation of the larynx	8	2
Inflammation of the lungs	202	14
Inflammation of the pleura	130	2
Hemorrhage from the lungs	44	2
Other diseases of this order	33	2
Order 6. DISEASES OF DIGESTIVE ORGANS.		
Colic	69	
Constipation	101	8
Cholera morbus	21	
Cirrhosis of the liver	1	
Dropsy from hepatic disease	56	12
Dyspepsia	54	
Diseases of the spleen	3	

Tabular list of diseases.	No. of cases.	No. of deaths.
Order 6. DISEASES OF DIGESTIVE ORGANS.—Continued.		
Fistula in ano	6	
Femoral hernia	9	
Inguinal hernia	9	
Prolapsus ani	4	
Hemorrhage from the stomach	1	
Hemorrhage from the bowels	2	
Inflammation of the tonsils	60	
Inflammation of the stomach	3	
Inflammation of the bowels	7	2
Inflammation of the peritoneum	17	1
Acute inflammation of the liver	20	1
Chronic inflammat'n of the liver	20	
Jaundice	123	5
Piles	17	
Stomatitis	49	
Order 7. DISEASES OF URINARY AND GENITAL ORGANS.		
Calculus	13	1
Diabetes	10	1
Dropsy from renal disease	20	2
Diseases of the prostate	30	
Diseases of the testis	5	
Gravel	37	
Inflammation of the kidneys	8	
Inflammation of the bladder	30	
Incontinence of urine	12	
Hydrocele	10	
Other diseases of this order	10	
Order 8. DISEASES OF THE BONES AND JOINTS.		
Caries	1	
Inflammation of joints	2	
Order 9. DISEASES OF THE INTEGUMENTARY SYSTEM.		
Abscess	26	1
Boil	11	
Ulcers	52	2
Whitlow	7	2
Skin diseases	10	
UNCLASSIFIED.		
Malingering	5	
Old age	2	2
Pregnancy	13	1
CLASS V.—VIOLENT DISEASES AND DEATH.		
Order 1. WOUNDS, INJURIES, AND ACCIDENTS.		
Burns and scalds	13	
Contusions	42	1
Sprains	27	1
Dislocations	4	
Frostbite	4	
Simple fractures (not gunshot)	9	
Compound fracts. (not gunshot)	8	2
Gunshot wounds (of all kinds)	17	
Incised wounds	24	
Lacerated wounds	12	1
Punctured wounds	6	
Other accidents and injuries	9	2
Stillborn	1	1
Order 2. HOMICIDE.		
Order 3. SUICIDE.		
Order 4. EXECUTION OF SENTENCE.		
Hanging		
Shooting		
Total	7949	346

ART. VII.—*On Torpedo Wounds.* By S. W. GROSS, A. M., M. D., late Bvt. Lt.-Col., and Surgeon U. S. Vols.

SINCE the invention of gunpowder, the movements of an enemy upon a work have been materially impeded or weakened by the explosion of subterraneous mines; and although comparatively few cases of injuries from this cause have been reported, yet the mere knowledge of the existence of such devices must have a very demoralizing effect from mental trepidation upon an attacking party. Charges of powder, or several loaded shells contained in a box beneath the surface, constitute fougasses, which have been frequently resorted to; the object being to explode them by means of

a fuse at the moment the enemy is passing over. At Sebastopol, the Russians employed double deal, water-tight boxes, of a capacity sufficient to contain thirty-five pounds of powder, exploded by means of sulphuric acid coming in contact with a mixture of chlorate of potassa, sulphur, and sugar. The acid was contained in a glass tube, covered by one of tin, and the weight of a person walking over it produced the explosion by crushing the glass tube, thus permitting the acid to come in contact with the combustible material.

So far as I have been able to learn, neither of the above contrivances was used in this country during the late war.

In the outer defences of Mobile, and especially about Spanish Fort, in April, 1865, the Confederates had planted an immense number of percussion shells, of from eight to fifteen inches in diameter, which were very harassing to our troops, so much so that it was even highly dangerous to take the horses to water. The loss of life and the number of injuries were large. The first instance of the employment of such measures during the war occurred after the evacuation of Yorktown, upon the occupation of which place many of our troops were killed and wounded.

My first and only experience with the torpedo was at Morris Island, South Carolina, in September, 1863, at which time Fort Wagner was in a state of siege. Early on the morning of the 7th of September it was determined to carry that stronghold by storm, the assaulting column being under the command of General Terry. It was, however, discovered that the Confederates had evacuated Forts Wagner and Gregg during the night, and made good their escape to Charleston. In front of the former work, a large number of torpedoes had been planted, and had the assault been made, the loss of life from this cause alone would have been very great.

All the torpedoes that I have ever seen were alike, being made of lager beer kegs, with cones of wood at each end, so that they resembled two cones with their bases in apposition. They were fifty-seven inches in length, by fifty-four inches in circumference at the middle. The keg portion was twenty-three inches long, covered with tar to prevent the powder becoming damp, and strongly bound with iron hoops. On the upper side was a heavy metal contrivance containing a percussion fuse, which consisted of a plunger and a percussion cap. The machine was buried, and a piece of board placed over the plunger, concealed by a light layer of earth and sand. It was said that four pounds' weight was sufficient to cause an explosion; and as a torpedo contained about sixty pounds of gunpowder, its effects can readily be imagined.

The lesions produced by the explosion of torpedoes are diversified. In a man whom I saw after being wounded at Yorktown, the entire posterior surface of the left leg and thigh was badly burned, the recovery being attended with contraction of the limb. Occasionally very grave and deeply seated injuries, without lesion of the integument, are produced, as in Case

III.; but more frequently complicated fractures result, or a portion of a limb is carried away. The following cases, all demanding amputation, illustrative of these injuries, came under my observation at the Field Hospital, Morris Island, S. C., and, strange to say, there was no example of instantaneous death. I ascribe the excellent results obtained to perfect quietude, fresh air, and a nutritious diet.

CASE I. *Torpedo wound of left foot; amputation of leg at lower third; recovery.*—Corporal W. H. Rich, Co. F, 4th Regt. N. H. Vols., was admitted at noon, Sept. 8th, with compound, comminuted fracture of the bones of the foot. The tarsal bones were extensively crushed, and the soft parts were in such a condition that no operation could be performed at the ankle-joint. The limb was removed at its lower third by the antero-posterior flap operation, and five ligatures were required. The case progressed most favourably. All the ligatures had come away on the 5th of October, and the patient was entirely well, with a good stump, on the 10th of November.

CASE II. *Torpedo wound of right leg; amputation at middle; recovery.*—George Wagner, private Co. D, "*Les Enfants Perdus*," was admitted at 7 o'clock A. M., Sept. 9th, on account of compound comminuted fracture of both bones of right leg in their lower third. Above the point of fracture a large flap of integument on the calf of the leg had been made, and it was blackened by powder. My executive officer, Act. Asst. Surgeon W. H. Finn, U. S. A., removed the leg at its middle by the circular operation, six vessels requiring ligation. On the fifth day there was some sloughing of the integuments of the calf, with a discharge of offensive pus, but in a few days healthy granulations sprung up under the use of the creasote dressing. On the twenty-third day, the last ligature came away, and the man was sent north, well, on the 10th of October, with the stump nearly healed.

CASE III. *Torpedo wound of right leg; secondary amputation of the thigh at its lower third; ligation of the femoral vein; death from mortification.*—Sergeant Thomas Mack, Co. A, 4th Regt. N. H. Vols., was admitted at noon, September 9th. The right foot and lower third of the leg were swollen, livid, and cold; a fracture of the fibula, about four inches above the ankle-joint, and one of the tibia lower down, could be detected. The integument was unbroken, and he suffered severe pain.

At the expiration of sixty hours bullæ formed about the foot and ankle, when incisions were made in the foot and leg, followed by the escape of clotted blood, with the effect of diminishing the suffering. At the expiration of forty-eight additional hours, the limb had become warmer, and hopes were entertained of saving it; but during the night of September 13th, mortification set in, and at 3 o'clock P. M. the following day had extended three inches above the ankle. I then amputated by antero-posterior flaps at the lower third of the thigh. Eight ligatures were required, one including the femoral vein. The patient was much exhausted by the operation and by his previous suffering.

The tissues of the thigh were infiltrated with gelatinous-looking serum, and had a greenish-yellow aspect. An examination of the limb showed a comminuted fracture of the fibula, about four inches above the joint, and the same condition of the tibia just above the malleolus. The ankle-joint

contained clotted blood, and blood was very extensively infiltrated among the muscles; but the orifices of the wounded vessels could not be discovered.

The patient did not rally from the operation, and death took place on the morning of September 16th. In the early part of the treatment the limb was swathed in cotton, full doses of morphia were administered to allay pain, and a nutritious diet and stimulants freely administered.

CASE IV. *Torpedo wound of right lower extremity; amputation above middle of thigh; ligation of femoral vein; recovery.*—Peter Riley, private Co. M, 3d R. I. Artillery, was admitted at one o'clock P. M., September 10th, with a very extensive torpedo wound of the right lower limb. The foot, with the exception of a small fragment of the calcaneum, had been blown away; the missile—supposed to be a part of the metallic exploding apparatus—had passed up the leg, leaving only the soleus and gastrocnemius muscles and the integument, and exposing the posterior tibial vessels and nerve. The entire anterior parts of the leg with the bones were carried away, a small portion of the head of the tibia alone remaining. The knee-joint was extensively fractured, and the internal semilunar cartilage had disappeared. The thigh-bone was fractured obliquely three inches above the knee, and bared to the extent of about six inches more, the periosteum being much bruised.

I removed the thigh by antero-posterior flaps at the upper part of the middle third, and applied six ligatures, one of which included the femoral vein, as this vessel continued to bleed and all other means had failed. On the third day the patient had slight traumatic delirium, and was transferred to Beaufort, S. C., on the 30th of September, where he came under the charge of Asst. Surgeon Ramsay, U. S. A. On the 9th of October the ligatures came away from the femoral artery and vein, and on the 10th of November the man had entirely recovered.

CASE V. *Torpedo wound of right leg; amputation of thigh at lower third; recovery.*—John R. Fordice, private Co. B, 39th Regt. Ill. Vols., was admitted September 12th, on account of comminuted fractures of both bones of the right leg, extending into the knee-joint, with great destruction of the soft parts. I removed the thigh in its lower third by antero-posterior flaps, seven vessels requiring ligation. The case progressed favourably without an untoward symptom, the ligature of the femoral artery coming away on the twenty-first day. At the expiration of the seventh week the cure was complete.

ART. VIII.—*Case of Neuralgic and Paralytic Affection following Precipitate Labour.* By ISAAC G. PORTER, M. D., New London, Conn.

CASES like the following, if we may rely on unrecorded testimony, are occasionally met with, and from their pathological obscurity and painful nature, demand a recognition in medical literature. That its probable cause may be better understood, it will be proper to mention a circumstance occurring in the previous labour.

In December, 1862, a lady, thirty-three years of age and mother of three children, was all day in labour with a fourth. At 11 P.M. (the os uteri being dilated to the size of an orange), the membranes ruptured, immediately after which the throes became continuously propulsive and violent, forcing the child rapidly forward until its progress was arrested, after the birth of the head, by the umbilical cord around its neck, which could neither be drawn downwards over the head, nor passed upwards over the shoulders. It was difficult to insert even a finger within the circle of the cord. The mother and child were nearly asphyxiated, and no resource offered except hastily dividing the cord with a pocket knife. It parted with an audible snap; the birth was immediately accomplished, the cord seized, and a ligature applied in the usual way. The posterior part of the child's neck was abraded transversely by the cord for nearly two inches, and the infant had a narrow escape from death by hemorrhage, it being necessary for a week to enforce gentle pressure on the part with pledgets of lint moistened with liquor persulph. ferri. The cord was relatively short, but not sufficiently so to have caused the delay. The mother's recovery was normal.

April 8, 1865. The same patient passed a tedious night, again in labour, and at 10 o'clock A.M. the os uteri was dilated to the size of an orange, when, rather to my gratification, the membranes ruptured—hoping that a consequent increase of uterine action might follow. The pains became gradually more powerful, until, as in the previous case, they were a perfect tornado—the birth being completed in fifteen or twenty minutes. Having the former case in mind, ether, which was by the bed-side, was administered as well as might be where the inhalations were so tumultuous. The child was larger than in the previous labour; its presentation, occipito-anterior-left. Very severe after-pains followed almost immediately, for which opium and camphor in full doses were given, but with little success; no sleep following for two days and nights.

10*th.* After-pains have given place to a constant numbness and burning pain in the hips, thighs, and back. These sensations were little, if at all, under the influence of powerful narcotics; twenty-five drops of Magendie's solut. morph. every third hour having but a trifling, if any effect. So painful was the sense of numbness or cramp, that the services of two women were required for hours consecutively to assuage her sufferings by vigorous friction of the parts affected. When the numbness subsided, hyperæsthesia of the same parts followed, the patient screaming with pain if touched at all roughly. A vigorous cathartic, with enemas, this day administered, moved the bowels thoroughly.

11*th.* Has had little or no sleep; is unable to pass urine. Catheter required for three successive days. Patient can lie only on her side; her limbs seeming paralyzed, and yet exceedingly sensitive. She can neither turn on her back or opposite side, nor suffer others to assist her in doing it. Milk and lochiæ normal; pulse 80 to 100; tongue somewhat coated; appetite poor.

14*th.* Much dysury, the effort to urinate causing great pelvic distress; decubitus lateral; is still taking morphia in full doses. A few large coagula escaped to-day, with some mitigation of distress.

15*th.* Motion at hips almost lost, the effort causing great pain. Pressure in the acetabulum, made by pressing upwards the head of the femur, increases the pain in the hips and back, as does every motion of the pelvis. Symphysis pubis not particularly sensitive. Vagina cool, yet there is increased tenderness when the finger impinges upon the sacro-iliac synchon-

droses, particularly the left. Involution of uterus normal. Perspiration over the hips and body is very profuse, so that her night-clothes are constantly drenched. This, continuing for weeks, formed an annoying complication. Dysury still continuing (urine acid and high coloured), it was treated with buchu, ext. hyoscyam. and camph., nit. potass. and mucilages, while constitutional symptoms were met with sulph. quin., aromat. sulph. acid in chamomile tea, opium and anæsthetic liniments. Their power and efficacy were not marked.

18*th*. Having lain four days immovable on one side, the nurses carefully raised her on a sheet and placed her on the opposite side, upon an adjoining bed, the change causing great distress. It being almost impossible to lift her by hand for any purpose, it is not strange that, through the combined influence of pressure, profuse perspiration and necessary discharges, bed-sores should form. Happily, through the unusual care of her attendants, they were never very large or severe. When the case became apparently chronic and inveterate, a water-bed and French urinal were procured, but she preferred trusting her faithful and skilful attendants. When the body is at rest, there is now but little acute pain, but micturition, or muscular motion of the parts affected, induces a return. It is less a scalding in micturition than an indefinable distress in the whole pelvic viscera. Purgatives have removed offensive fecal matters, but active cathartics were always subsequently attended with severe tormina, calomel especially. Empl. canthar., 4 by 6, applied to sacrum.

20*th*. Condition much the same; very little sleep. There being violent griping pains in the abdomen, continuing for hours, with tenderness, the nurse administered an ordinary enema and soon after another, when she was greatly alarmed at the discharge of what appeared to be *intestines* in portions of from one to ten inches in length, followed by much mucus, with extreme distress. It was a croupous or fibrinous membrane, some two or three feet in extent, and its discharge afforded great relief. A portion of ten inches was retained by the nurse for my inspection. It was tubular, of a light flesh colour, and thicker and more fleshy than a bladder. There was no return of this peculiar feature.

25*th*. Retention of urine; decubitus uni-lateral for four days continuously. Patient was again moved on a sheet; is always worse at night, and sleeps but little. Numbness in limbs demands constant friction. Appetite for solid food rather increasing.

27*th*. Power of motion decreasing while the effort causes more distress. It may be less a loss of power, than an unwillingness to be disturbed. Hyperæsthesia of surface nearly gone. Limbs colder than the body.

At this stage of the disease the patient was visited by Dr. Foster Swift, of New York. The case was again carefully examined in the light of modern physiology, hoping from the language of symptoms, the different kinds of sensibility as shown by pricking, tickling, and pinching, that might or might not exist, to deduce the true location and nature of the disease. The case was also submitted to high surgical and obstetrical authorities in New York, but without eliciting a decided opinion. It was also seen by Drs. Perkins and Hobron, of this city. Bromide of potass. in conjunction with carb. ammon. and tinct. cinch. comp. was prescribed as a soporific and nervine tonic, but its powers as an anodyne were doubtful or nugatory.

The urine was collected by means of sponges, and tested for albumen by means of heat and nit. acid, but without discovering more than a slight trace.

28*th*. Hip is abraded and an ulcer forming. As a preventive, the parts exposed have been frequently washed with alcohol, holding in solution a minute quantity of corros. sublimate. Dry cups to the spine are apparently of no benefit.

30*th*. Hypodermic injections of ¼ gr. sulph. morph. commenced, this morning, with the effect of quieting the pain and indefinable distress almost immediately, but without inducing sleep. In the following evening ⅓ gr. morph. was injected.

May 1. Patient has had an entire night's rest, sleeping continuously two and a half hours.

It was found that a single injection daily of ½ gr. at night quieted the pain and induced a delightful calm, the patient remaining wakeful. One-half a grain in the morning and one-third of a grain at night seemed necessary to quiet irritation and induce a fair amount of sleep.

4*th*. Patient decidedly better; moves limbs with less pain and more power, and during the night, by grasping the "head-board," partially turned on her back.

Still it was weeks before she could remain there, or sit up in bed. On the 18th inst., by means of the "head-board," she contrived to turn on her face. Ordered tinct. nux vomica and colomba in full doses three times a day. Constipation from the outset had been constant and obstinate, but from this date it ceased altogether. One grain of morphia is administered, hypodermically, daily.

22*d*. Had an attack of pain which was confined to the knee, with swelling and redness, but no unusual febrile action, and which yielded in three days apparently to a free use of alkalies.

28*th*. Had similar pains in the shoulders, symphysis pubis and muscles of the chest, which soon subsided under the same treatment and the influence of fair weather conjoined. Damp, cloudy weather and the electrical influence, whatever it may be, which attends thunder-storms, seemed now and subsequently to increase her discomfort. Morning dose of morph. this day omitted. Besides the nux vomica, she is taking iron, and whiskey and cream.

June 9. Sat in an easy-chair for the first time. Feels the loss of her morning injection, but her discomfort and weakness cease in five minutes after the administration of ½ gr. morph.—the exemption from distress continuing six or eight hours.

11*th*. Turned from side to side in bed, and raised herself from her chair unaided, except as she pressed on its arms. Standing produces great discomfort at the hips.

July 1. Hypodermic injections have never produced the slightest inconvenience or drawback, except a slight condensation of cellular tissue in the neighbourhood of the puncture, which remained partially unabsorbed for a period of two months. In all cases the needle was introduced at or near the sacrum. Though always conferring strength and comfort, yet from this date they were discontinued, the cold salt bath taking their place. Her limbs and back were rubbed daily with alcohol and aqua ammon., particularly the left hip and leg, which has always suffered much more than the right.

13*th*. Walks the floor with only a cane; "burning" and stiffness remaining. Spine has never been tender on pressure.

Aug. 20. Her gait remains peculiar and "waddling." She is very stiff after sitting an hour, but motion is more free on exercise. Still much

tenderness exists behind the great trochanter, and œdema of the legs and ankles, particularly the left.

Nov. 1. Faradization of the left hip and leg for a month has proved beneficial, though the gait remains unnatural. (The same is true also at this date, January 30, 1866.)

Before proceeding to consider the diagnosis and pathological relations of the main feature in the preceding case, it will be proper to advert for a moment to the unusual circumstance occurring in a former labour, and to which allusion has been made. Although cases are rarely met with in practice, or noticed in obstetrical works, where it is necessary to divide the cord before the entire completion of the birth, yet some features of this case, particularly the abrasion of the child's neck, seem to justify the course. Every accoucheur knows the importance of ascertaining, in the little interval usually occurring after the exit of the head, whether the cord surrounds the child's neck, since, should it be neglected, and the succeeding pain be very propulsive, no little trouble may supervene through inability to draw down the cord. Suppose a case, however, like the present, where the uterine nisus is continuous and powerful, the cord, which encircles the child's neck is so firmly pressed between the child and the soft parts of the mother, that the former is securely *tied* in its position, and must so remain until the cord breaks, or an intermission for a moment in the pains allows it to be drawn down. In a large pelvis possibly no difficulty would arise, the cord descending with the child. It is obvious, however, that unless the birth in such cases be completed soon after the division of the cord, the child may perish from hemorrhage, though the pressure to which it (the cord) is subjected will greatly diminish the risk. But perhaps a nearly equal danger arises from neglecting the operation, since traction and pressure combined must, by interrupting the circulation between the mother and child, prevent hæmatosis.

The question may arise: Is not this neuralgic and paralytic affection a case of puerperal paralysis, a disease so ably discussed by Churchill? His cases, however, were generally attended with uræmia, albumen being present in the urine, while in this case only a mere trace was discovered. It partook, moreover, less of paresis than of neuralgia. A remark of this author shadows forth, as it is believed, the true rationale of the affection. He says: "Paraplegia, as we have seen, has been attributed to severe and prolonged labour and to the mechanical pressure upon the nerves and muscles of the pelvis, and at first sight this seems an adequate and feasible explanation, and of which no one could deny the possibility." It is my belief that in the violent throes of labour the larger nerves of the pelvis, or the sciatic plexus whence they proceed, were injured, and "subinflammation and consequent thickening of the investing membrane or neurilemma followed." This conclusion seems authorized by the language of Dr. Hennen, quoted in the preceding sentence, who thus explains why obsti-

nate traumatic neuralgia often follows bruises from gunshot wounds where the missile had only passed *near* a large nerve but without touching it; the inflammation in the neurilemma being sufficient in this case to produce abnormal nervous action, as evinced in numbness, burning pain, and semi-paralysis in the part, which ceased only as the original injury was repaired. Hypodermic injections, meanwhile, by their peculiar power in quieting irritation, subserved a most beneficent influence. To every accoucheur who has witnessed the painful cramps and numbness in the hips and lower extremities sometimes produced in the last stage of ordinary labour by certain positions assumed by the fœtus in its passage, it must seem passing strange that cases similar to the foregoing are so rarely encountered in practice.

The question may also arise: What connection, if any, was there between the croupous membrane discharged and the local nervous affection? Contrary to general experience, this morbid product of the intestinal mucous membrane, denominated by Good, diarrhœa tubularis, and by others fibrinous diarrhœa, was not in this instance chronic, there being no recurrence; nor was it found in a person of infirm health, as is almost universally the case. On the contrary it must have been the product, not primarily but secondarily, of the same cause as the other affections in question. In every case of these discharges that I have met with, there has been a marked lesion of the nervous system resulting in "chronic ill health," great irritability of the intestinal canal, rendering the administration of cathartics highly painful and injurious, while in some cases there have been regular alternations between the pain in the lower part of the abdomen and back, with occasional fibrinous discharges, and a most agonizing distress in the head, both affections never existing simultaneously. Dr. Mott, in a treatise written for the Sanitary Commission, assigns as a reason why operations under anæsthetics are less mortal, that "the nervous system controls the vascular. The nerves being protected, the pulse is but little affected and collapse is less marked." Thus in this case, the cause of lesion of the nervous system, whatever it was, may have produced a temporary influence on the vaso-motor nerves of the intestines, with the supposed morbid result. These exudations, as I have met with them, have usually been translucent, thin, and of a pearly white, and have gradually ceased to appear when with slight medication the person affected obeys the general laws of health. In the case before us, the cause being temporary, the effect ceased with it. As confirmatory of this view, a remark of Dr. Locock respecting the membrane in dysmenorrhœa may be quoted. "Although generally neuralgic, yet probably in those cases where the membrane is discharged, there may be an inflammation of the mucous membrane of a peculiar kind."

A single remark is added respecting the œdema in the left leg and ankle, which was peculiar, it being firm and persistent alike in the morning and at night, as if arising, not from debility or venous obstruction, but dependent rather upon a paresis of the vaso-motor nerves, and a consequent partial arrest of tissual metamorphosis.

ART. IX.—*On Fractures of the Larynx and Ruptures of the Trachea.* By WM. HUNT, M. D., one of the Surgeons to the Pennsylvania Hospital. With a case.

P. M., aged 45, was admitted to the Pennsylvania Hospital, January 16, 1866. He was employed in a saw-mill, and whilst engaged in superintending a circular saw, which was driven by steam power, a piece of wood about two feet long and four inches wide flew from it, and struck him with great force on the front of the neck. He was not seen immediately by his fellow workmen, but was found by them it is supposed some fifteen minutes after the accident. He must have been knocked completely senseless, for, when found, consciousness had not fully returned. The symptoms on admission, at about one o'clock P. M., were as follows: Countenance pale and anxious, great dyspnœa, orthopnœa, respiration 30, pulse 90 and full, voice almost gone, could speak only in a hoarse whisper and with great effort, but repeatedly told me that he had no pain; could swallow water and soup slowly and without spasm. Had constant bloody expectoration. There was great emphysema of the sides, front, and root of the neck, so great indeed as to prevent the handling of the larynx, and thus interfering with positive diagnosis; but that this organ or some portion of the windpipe had sustained severe injury there was no doubt. Active surgical interference was not at once resorted to; but after the patient was placed in bed, anodynes were administered and inhalations of steam were prescribed. At 5 P. M., I saw the patient in consultation with Dr. Agnew. His condition was about the same, except that he could not swallow with as much ease as before, and although he made some contortions of the face in the effort, he declared positively that he had no pain. There was no increase in the emphysema. As the circulation was very good, it was still thought best not to operate, but to wait for more urgent symptoms. Gentle and even pressure was directed to be tried about the neck with compresses and roller in the hope of relieving the emphysema, but this could not be endured. Directions were left with the resident surgeon, Dr. Andrews, to send for me if urgent symptoms came on, and if there was not time for this, to open the trachea and insert a tube. In the night the patient grew worse, and about one o'clock A. M., as no time was to be lost, the trachea was opened by Dr. Andrews, and a tube was introduced.

Great ease followed the operation. The patient lay down and slept gently, but was evidently much exhausted, as his respiration was 40, and pulse 104. He did not rally from this condition, but gradually sank and died at a quarter past seven A. M.

Post-mortem.—The neck and thorax were particularly examined. The lungs were emphysematous throughout the upper lobes. There was great congestion of the posterior and lower portions, and this to such a marked degree in some places as to give the appearance of solidification, but all parts floated in water, and air bubbles could be pressed out from them. The anterior mediastinum was filled with air, and much was contained in its connective tissue communicating with that of the neck. There was an oblique comminuted fracture of the larynx, including both the thyroid and cricoid cartilages, and extending posteriorly on the right side through the base of the arytenoid, throwing this completely from its position and causing it to protrude through the lacerated mucous membrane of the same

side. A slight laceration of the membrane of the opposite side was also found. Œdema of the glottis was well marked, and the aryteno-epiglottidean folds were enormously swollen with serum and extravasated blood.

Remarks.—This is the first case of fracture of the larynx that I have met with, and as the injury is spoken of by all authorities as being very rare, I have investigated its history and have been enabled to tabulate twenty-nine cases, twenty-seven of which are perfectly authentic, three or four involving the trachea only, but arising from the same causes and requiring the same treatment. There are many points of very great interest to notice, and I hope the list will have some influence in establishing a course of practice for what is really a very embarrassing case when one meets with it for the first time.

The prominent symptoms in nearly all cases are the same. There are dyspnœa, orthopnœa, and emphysema, with the consequent distress, anxiety, and lividity of surface. Pain and cough may or may not exist to any great degree, and as to deglutition, which is declared by some to be impossible, we have seen in this case that the patient could swallow without much effort.

I should regard *bloody expectoration*, in conjunction with the other symptoms, as almost diagnostic, and if the voice should be but a hoarse whisper, the larynx would almost surely be the seat of laceration. Of course, none of these signs are absolute, but the importance of them lies in the fact that the swelling is often so great as to render a manual examination of the larynx impossible.

When an examination with the fingers can be made the fragments will be detected and crepitus may be produced.

Some authors speak almost slightingly of this injury, and recommend rest, diet, and other palliatives. We will find, however, that it is a very grave casualty, for of the twenty-seven cases seventeen died.

Influence of Age.—Here we have a good instance of a statement being handed down through generations without investigation. Morgagni says he has seen this injury, and always in *advanced* age. He does not give his cases, but I have credited him with one of the unauthenticated ones in the list. We have the ages given in fifteen cases. All but one, a female of 66, were not over 45, and five instances occurred in children, one of whom was only 4 years old. From the occupations of the others when injured, it is to be presumed that most of them were not beyond middle life. It is not to be denied that ossification of the cartilages would predispose to fracture, but that this condition necessarily pertains to age, is not true. In evidence of this, I may quote the following observation in the transactions of the Pathological Society of London, reported in the *Medical Times and Gazette* for March 30, 1861:—

"Mr. Canton brought forward a larynx from a man aged 103, to show that certain changes, as calcification of cartilages, &c., were not merely the

changes of old age, but indicated a general condition, which might occur in early age, and which was associated with definite changes in other tissues. The laryngeal cartilages in this specimen were very little ossified."

Causes.—Falls against hard and projecting substances, blows, kicks, and pressure are the common causes. All the children, except one, received their injuries by falls. One would have thought that the regular prize fighters would have furnished an example, but the only case of this kind is Marjolin's, and was caused by two women getting into a difficulty. M. Nélaton says, in his remarks on case No. 12, that "in Paris when quarrels occur they have a practice of introducing the hand into the cravat, and of twisting it so as to exert great pressure upon the neck. He had seen fractures of the cartilages of the larynx and of the thyroid bone, caused in this way, and he believed that such violence had produced a fracture of the thyroid cartilage in this case. It should be remarked that such fractures are often incomplete." There is a tendency in such cases to local inflammations, abscess, and denudations of cartilage.

Treatment.—Of the twenty-seven cases ten recovered and seventeen died. Eight were operated upon, but of these two died, leaving six recoveries by operation. Four cases got well by bleeding, rest, silence, &c.; but these were separations in the median line, and I infer did not lacerate the mucous membrane, as emphysema and bloody expectoration are not mentioned in any of them. In fact Gibb, who reports one of them, says that the patient complained of loss of voice and an indescribable sensation in the throat, and that there was neither difficulty of breathing, nor displacement except when made by the examiner.

Another case was in Marjolin's belligerent, whose thyroid was broken from the upper to the lower margin. The third was Dr. Norris's, and nothing of the kind could have existed in M. Nélaton's case, which was not seen until twenty months after the accident. But these cases are very rare. I think our list shows that active and prompt treatment by *laryngotomy* or *tracheotomy* gives the only hope of success where the emphysema and bloody expectoration show that the mucous membrane has been lacerated by the broken fragments. Between the cases that got well without operation and the others, we have all the differences that exist between simple and compound fractures in general, with the infinitely great addition that the function of the part is essential to life, and some part below it must supply its place before it can be put at rest.

Tracheotomy and laryngotomy are not new in these cases, as is shown by the successful operation of Habicot, in 1620, and also those by Liston, Eichmann, Sawyer, and Long; although Dr. Hamilton says, in his well-known work on Fractures and Luxations, "I am not aware that it has ever been practised except by myself, yet its propriety under certain conditions is sufficiently manifest."

If then, after getting the history of a case, we have bloody expectora-

tion and emphysema accompanying the other symptoms, an operation should at once be performed, *for we have obtained no record of such a case getting well without it.* Although severe cases are rapidly fatal if let alone, yet considerable delay appears to be compatible with recovery, for in Dr. McLean's case the operation was not performed until the sixth day; but it is reasonable to suppose that if the case is a clear one no time should be lost, as the general exhaustion and actual damage to the lungs, by the agonizing efforts of the patient to get breath, must, if continued, materially interfere with a favourable result. The capacity of the larynx, through its delicate muscular structures, to rapidly accommodate itself to the altered condition of affairs, is beautifully illustrated in the cases that were successfully operated upon, for from all, except Dr. Sawyer's patient, the tube was removed much earlier than the injured parts could have been entirely healed. Chelius speaks of cutting open the larynx freely in the mesian line in its whole length and replacing the broken cartilages. It seems to me that this would be unnecessary in ordinary cases, and that in severe ones, where there is much comminution, it would be impossible. Eichmann elevated a dislocated portion of thyroid cartilage, in his successful case. He used a bent polypus forceps for the purpose.

Dr. Hamilton remarks: "If this operation were to be practised, the wound ought to be left open for a sufficient length of time to allow of the subsidence of the inflammation, and then permitted to close with such precautions as experience teaches are usually necessary after the windpipe has been opened."

Dr. Sawyer's case is worthy of especial notice, and illustrates the value of tracheotomy even where other very serious injuries complicate those inflicted on the windpipe. As soon as a requisite supply of air was furnished by artificial means, the patient slowly recovered from a condition that was about as hopeless as could well be imagined.

The laryngeal structures in this case were so displaced that six months after the original injury, Dr. Sawyer made the attempt to replace them, somewhat after the manner advised by Chelius, and to insert a tube in this position, with the hope of ultimately dilating and restoring the natural air-passage. His efforts, after great perseverance, were not successful, and the patient continued to wear the tube in the tracheal opening.

Statistical Table of Twenty-nine Cases of Fracture of the Larynx and Rupture of the Trachea.

No.	Author.	Date.	Sex & age.	Cause and nature of fracture.	Treatment.	Result.	Reference.
1	Habicot	1620	F. 25	A ball struck larynx, "damaging left side of thyroid cartilage."	A leaden tube was introduced in trachea, and allowed to remain 3 weeks	Recovered	"Surgical Inquiry, etc., by Nicolas Habicot," quoted in Louis on Bronchotomy, Sydenham Society, 1848, p. 229.
2	O'Brien	1818	F.	"Kicked under jaw;" thyroid and cricoid and first ring of trachea broken	Scarifications and opiates	Died	Ed. Med. & Surg. Journ., vol. viii.
3	Liston	1823	F. 8	Fell and struck larynx against a stone	Tracheotomy; tube kept in 8 days	Recovered	Ed. Med. Journ. Oct. 1823, vol. xix. p. 570.
4	Ollivier	1823	..	Particulars not given	.....	"Died of suffocation"	Archive Générales de Médecine, tome ii. p. 307.
5	G.W. Norris reported by H. H. Smith	1837	M. 45	Knocked down by a blow, and struck neck on piece of coal; thyroid plates movable and crepitant; *no bloody expectoration or emphysema*	Bleeding, leeching, low and fluid diet	Recovered	Philad'a Med. Examiner, vol. i., 1838, p. 151.
6	Ladoz	1838	M. 37	Assassinated by strangling with a handkerchief; oblique fracture of right wing of thyroid	.....	Died	Gaz. Médicale, 1838, p. 698.
7	Gibb	1845	M. 30	Fell against carriage step, and fractured thyroid in mesial line; *no bloody expectoration or emphysema*	Rest; no conversation allowed; fluid diet	Recovered	Gibb on Diseases of Throat, Œsophagus, and Windpipe, London, 1860.
8	P. Hewett	..	M. adult	Fell from scaffold; had other injuries, but the cricoid of the larynx alone was broken	.....	Died	Transactions of Path. Soc., Lond., vol. i. p. 199.
9	Eichmann	1850	Child	Fell, fract. thyroid and separated arytenoid as in my case	Operation proposed and refused	Died	Brit. & For. Med. Chir. Review, 1851, vol. viii., p. 273, from Med. Zeit.
10	Eichmann	1850	F. 9	Fell on edge of iron chest	Laryngotomy	Recovered	" "
11	Marjolin	..	F. adult	Squeeze by another woman; thyroid broken from upper to lower margin; *no bloody expectoration or emphysema*	Silence, regimen, and a small bleeding	Recovered	Marjolin, Cours de Pathologie, p. 396.
12	Nelaton by W. F. Atlee	1852	M. 30	From violent twist of cravat by another person; seen 20 months after injury; diagnosis incomplete fracture of thyroid	Had abscess of neck over thyroid; was opened, and iodine injections used	Improved	W. F. Atlee's Notes from Clinical Lectures on Surgery by M. Nelaton, p. 122. Phila. 1855.
13	J. L. Atlee, jr.	J'ly 1856	M. 4	Fell against scraper; reported as rupture of trachea, but no post-mortem allowed	.....	Died	Am. Journ. Med. Sciences, Jan. 1858, p. 120.
14	Robertson	Sep. 1856	M. adult	Kick of horse; rupture of rings of trachea from larynx; latter uninjured	Bled	Died	Lancet, Sept. 6, 1856.
15	Hamilton	Nov 1856	M. 41	Kick of horse; thyroid and cricoid both broken	Cold and warm lotions, ice in mouth; laryngotomy on 2d day	Died	Hamilton on Fractures and Dislocations, 2d edition, 1863, p. 135.
16	McLean	1865	M. 32	Fell and struck neck against a stump; thyroid certainly fractured	Tracheotomy on 6th day; tube withdrawn on 9th day after operation	Recovered	Am. Journ. Med. Sciences, Jan. 1866, p. 261, from Canada Med. Journ., Sept. 1865.
17	Hunt	1866	M. 45	Piece of wood flying from circular saw fractured thyroid, cricoid, and arytenoid	Opiates and gentle pressure; tracheotomy 2d day	Died	Am. Journ. Med. Sci., April, 1866, p. 378.
18	Plenck	..	..	Fell against rim of pail; thyroid and cricoid both broken	.....	Died immediately	Malgaigne, Traite des Fractures et des Luxations, Paris ed., p. 409.

No.	Author.	Date.	Sex & age.	Cause and nature of fracture.	Treatment.	Result.	Reference.
19	Remer	..	..	Hanging	.....	Died	Annales d'Hygiéne, tome iv. p. 171.
20	Long	1855	M. 20	Caught by neck between two railway buffers; trachea ruptured, and rings separated to width of one inch	Tracheotomy, & after tube inserted respirat'n entirely failed, and suction by the mouth of surgeon was resorted to to free the lungs from mucus and blood, and the lungs were also reinflated.	Recovered	Med. Times and Gazette, May 10, 1856.
21	Berger	1856	M. adult	Kick of horse under the jaw; trachea was torn from larynx, and this remained unbroken	.....	Died	Berlin Med. Zeit., No. 33, from Med. Times & Gaz., Dec. 27, 1856, p. 650.
22	Helwig	1861	F. 66	Cause never known; found dead in bed. Left side of thyroid broken, and both cornu of hyoid bone	.....	Died	Casper's Vierteljahrschrift, 1861, No. 2.
23	Valsalva	..	..	Each has seen one case	.....	Died	Malgaigne, Fractures and Luxations, Paris ed., p. 408.
24	Casau-vieilh	..	..	of fracture of cricoid alone. These must have died, as the statement would not have been verified. Histories not given.	.....	Died	
25	Weiss	..	..	Also cricoid alone fractured, but in this case broken into fragments	.....	Died	" "
26	Morgagni	..	..	Says he has seen fractures of larynx, and that it always occurs in advanced age	.....	..	
27	Sodoly (?)	..	..	Cannot find the history. Mentioned in report of Dr. McLean's case	.....	..	
28	Kenderdine	1855	M. 16	Kick of horse; fracture of thyroid and rupture of trachea	Palliative	Died	Unpublished case at Episcopal Hospital, Philada.
29	Sawyer	1854	M. adult	Fell 45 feet; hyoid bone, thyroid cartilage, jaw, radius, and patella broken.	Tracheotomy on 6th day; had ceased to breath when trachea was opened. A quill was inserted, through which lungs were inflated; tube continued to be worn a year after operation.	Recovered	Am. Journ. Med. Sciences, Jan. 1856, Art. I.

NOTE.—An Essay on Fractures of Cartilages of Larynx was written by Cavasse, Paris, 1860. I have not had access to it. I also have read that during the recent war against the rebellion, tracheotomy or laryngotomy was resorted to fifteen times, with six recoveries.

The details of these cases have not been published, but doubtless some of them were for injuries to the main air-passages. It is not intended to include gunshot wounds of the larynx in this paper, but some of them require to be treated on the same principles as internal fracture and rupture. Habicot's case was one of this kind, and in Guthrie's Commentaries, &c., Philadelphia, 1862, p. 573, a case is reported of a soldier whose thyroid cartilage was shattered by a ball. Tracheotomy was performed on the second day, but the patient died shortly after the operation.

ART. X.—*Report of Eight Cases of Lithotomy performed during the past four years.* By PAUL F. EVE, M. D., Prof. of Surgery in the University of Nashville. Read before the Nashville Medical Society, January 3, 1866.

DURING my connection with the Southern army eight cases were operated on for urinary calculi, in the States of Mississippi, Alabama, Georgia, and South Carolina. In four of these a plurality of stones was found. From one 18 were removed; 17 from another; and from the two others 2 each—making an aggregate of 43 calculi in the eight cases. Moreover, in the case presenting the greatest number, this was the third operation that had been performed on the same patient, 193 calculi having been taken from him at the three operations. Of the eight cases three proved fatal; but one of these, however, it is believed could be properly attributed to the operation.

CASE I. *Patient 60 years old; lateral operation; death sixty-four hours after operation.*—While stationed in Columbus, Miss., I operated on Mr. N., of Hinds County, in that State, who for years had been affected with symptoms of stone. He had consulted Dr. Warren Stone, in New Orleans, who told him he had several calculi, which was verified by the operation. My patient was a short, thick-set, fat man, aged 60. His suffering had been so protracted, and lately so acute, that he had determined on an operation, even if it cost him his life. The prostate gland was found so enlarged, and the perineum so deep, that the bladder was never reached with the finger, either by the rectum or the incision, and the male catheter, five and a quarter inches in length, had to be buried in the wound to reach the urine.

Having no lithotomy instruments with me, my friend Dr. Samuel Malone, formerly a surgeon in the U. S. Navy, kindly loaned me his case, and urged me to use the gorget. He had himself cut some twelve or fifteen cases, as well as I recollect, with uniform success. His grooved staff was of the old pattern, representing the segment of a large circle, and was therefore of unusual length. I had operated for hæmorrhoids on the doctor about this time, and was therefore deprived of his valuable assistance.

This operation, performed on the 26th day of May, 1862, was the lateral, with the gorget; my first, and I hope it will be my last, with that instrument. I felt unwilling to trust, as I had done before, to the knife alone, in so deep a perineum. I have little doubt that the beak of the staff, in pushing the gorget into the bladder, injured the organ, and may have produced the acute cystitis of which he died. It may have been previously inflamed by the foreign bodies it contained, and was therefore only aggravated by the operation. The composition of the stones, *phosphate of lime*, would tend to confirm this latter opinion, as stones of that composition are almost exclusively due to diseased bladder. The patient, being in a state of anæsthesia, could not of course be sensible of any damage done him during the operation; but from the time he became sensible to pain till his death, which occurred sixty-four hours after, he complained of a

constant pain over a point a little to the right of the median line of the pubic region. A *post-mortem* revealed no peritonitis, but a dark inflamed spot on the internal upper surface of the bladder. This organ, thickened, inflamed, softened, and rugous; the prostate gland greatly enlarged, two inches in diameter; just behind this gland lay nine small calculi, which, added to the eight larger extracted during the operation, make the number seventeen. They have a pretty uniform, tetrahedral shape, except the largest two and the smallest, which are globular, with only two flat faces; are of a fawn colour, with polished surfaces, and weigh five drachms.

Acknowledging the many advantages of the lateral operation, and having occasionally selected it myself, I certainly have no desire to disparage that method, nor to denounce the gorget, since excellent results have followed its use; still I cannot but think that the sad issue in the above case might have been different had the more direct operation into the bladder, with the bilateral section of the prostate, been performed.

CASE II. *A conscript, aged* 20; *bilateral operation; recovery.*—W. M., of Carroll Co., Georgia, was conscripted, and sent to the Gate City Hospital in Atlanta, to be treated and prepared, if possible, for the service. He had had from infancy symptoms of stone, and would have in all probability died if his vesical distress had not been relieved by operation. After due preparation the bilateral operation was performed on him the 18th October, 1862. Within three weeks he was well enough to be furloughed, and on his return he was regularly detailed as a nurse in my hospital. His constitutional stamina was very much impaired, and it is doubtful whether he will ever become a hale and healthy man, though he was fully relieved by the operation. He did full work of a nurse. The calculus measured six and a quarter inches in the greater circumference, by five inches in the shorter, and weighed nearly four ounces.

CASE III. *Boy* 12 *years old; bilateral operation; recovery.*—This was the son of a soldier, family connection of the above, and operated on the same day and by the same method. A remarkably irregular calcareous mass was removed from his bladder, weighing several drachms, and broken into nine fragments. Its shape is concavo-convex, with undefined edges, fitting the bladder apparently just within the neck, and is about half an inch in thickness. Its composition is the ammoniaco-magnesian phosphate, or fusible calculus.

The patient, about twelve years old, returned home in a few days; his wound healed; but I don't suppose he will long remain free from calculous affection, for there are apprehensions of incrustations in his bladder.

CASE IV. *Patient* 56 *years old; third operation; bilateral;* 18 *calculi; death from erysipelas, but not traumatic.*—This is a case of no uncommon interest; independent of the number of stones generated in it, the source of the lithiasis is clearly defined; we know the cause of their formation.

In September, 1824, a terrific equinoxial gale swept the Southern Atlantic coast. Sea birds were driven by it far into the interior of Georgia, and the beautiful China trees, the pride of India, were prostrated in the streets of Augusta. By this hurricane our patient, Mr. O'B., then at work on a house in Hamburg, was injured by the falling building, a stick of timber

striking him in the lumbar region. From this he dates all his vesical distress. He was then eighteen years old. For twenty-four years he searched the land and sea (for he even became a sailor) for relief, but all in vain; until in January, 1849, I performed the first operation on him in the hospital of Augusta. At this time he urinated by pushing up the bladder with the fingers in the rectum, while he was in the horizontal position. He stated, too, that a large quantity of muco-purulent matter escaped with the water from the bladder, which was highly ammoniacal. By an incision into the perineum 56 calculi were removed, and then with the double lithotome conducted by a grooved director, and bilateral section of the prostate 61 more extracted from the bladder. The patient was so emaciated at this time that like a child I took him in the arms up a flight of stairs after the operation.

These calculi were impacted in the perineum and cystic cavity; have a uniform shape, tetrahedral, with rounded angles; are highly polished on their surfaces, and vary in weight from a few grains to two drachms. Chemically they consist of almost pure phosphate of lime. The membranous portion of the urethra preserved its integrity, while the bulbous became distended and retained the stones as they attempted to pass out from the bladder.

This patient made rapid recovery under the circumstances, having returned home the eighteenth day after the operation.

In 1854, five years after this, Mr. O'B. wrote me that he had a return of his former symptoms, and being unable to come to Nashville, my kinsman, Dr. H. F. Campbell, then of the Medical College of Georgia, now in the New Orleans School of Medicine, operated on him some time about 1857, extracting successfully 58 calculi.

In April, 1863, the third operation was performed on this patient in Atlanta, unfortunately in an hospital, and 18 stones removed—making a total of 193. He did remarkably well up to the tenth day, when he complained of being very sick, and became quite feverish. As the wound of the bilateral operation was in good condition, he was encouraged with the hope of a speedy return home. On the twelfth day, greatly to our surprise and deep regret, the left forearm, near the wrist, was attacked with erysipelas, which, in his feeble state of health, made such rapid progress in spite of the means employed, that life was soon extinguished. The wound even then presented nothing unusual. It is right to state there was no case of erysipelas near the patient at the time of the operation.

These calculi, presenting as they do the same appearance, shape, colour (nearly white), composition, &c., must have had a common origin. They were certainly formed and moulded in the bladder; were evidently *cystic*, and not nephritic. Dr. Means, now of the Atlanta Medical College, who analyzed them, supposed at the time that the prostate gland had some agency in their production. The patient, however, declared that his virile powers were still unimpaired, and his wife was actually seven months pregnant when he underwent the first operation. The true explanation of their multiple formation, it seems to me, is that the injury to the back of the patient caused partial paralysis of the bladder. Chronic cystitis then ensued from long sojourn of the urine in this receptacle, leading to decomposition of its secretions and the deposit of the earthy phosphates, while

mechanical and chemical action account for their peculiar organization. Authors agree with much unanimity in the great disposition to phosphatic concretions following blows to the dorso-lumbar region. It is curious to observe too how closely in every particular (except a slight shade in colour) these calculi resemble those removed from Mr. N., or in the first case here reported; they also being in all probability due to chronic inflammation of the bladder.

CASE V. *Female aged* 40; 2 *calculi; relieved by the vaginal section.*—Mrs. D., mother of several children, residing in Jefferson County, Georgia, has experienced during the past four or five years great distress in urinating. On the 17th of June, 1863, I found on examination a portion of a calculus projecting into the vagina about an inch and a half beyond the orifice of the urethra. As there thus existed a vesico-vaginal fistula, on the grooved probe passed through the urethra and out of the fistulous opening into the vagina, an incision was made through which two pretty large calculi were extracted from the bladder. One rotates in the other like a ball and socket, having finely polished surfaces, while everywhere else they are both quite rough. They measure six and a half by four and three-eighth inches in their circumferences. The smaller one was situated anterior, while the larger occupied the fundus of the bladder, and it was a tubercle from this one which had ulcerated the vesico-vaginal septum.

I have heard two or three times from Mrs. D. since the operation, that she is satisfied with the result. Without knowing her actual condition, I would suppose she has still *stillicidium urinæ.*

CASE VI. *Boy* 7 *years old; bilateral; recovery.*—This was the son of the Rev. Mr. McQ., of Talladega, Alabama, whom I cut bilaterally the 7th of November, 1863, and who was effectually relieved. He was at the favourable age for lithotomy. The calculus extracted resembled an almond.

CASE VII. *Boy* 3 *years old; bilateral; recovery.*—The son of the purveyor of my hospital, Capt. W., residing near La Grange, Georgia, was operated upon the 2d of December, 1863, by the same method and with as good result as in the above case. The stone removed was about the size and shape of a common marble.

CASE VIII. *Patient* 24 *years old; bilateral; 2 calculi; death from imprudence.*—Mr. A. W., aged 24, of Barnwell District, South Carolina, has suffered many years from difficulty in urinating, and could now only effect this pressing necessity while in the recumbent position, and with one leg elevated during this act. He was so feeble and emaciated that even conscription left him unmolested.

On the 21st October, 1864, by the bilateral operation I removed two stones, which weighed together about twenty drachms. They have not been returned to me by the family.

With care and prudence my patient was gradually improving, doing well to the twelfth day, when he unfortunately ventured to get out of bed, and standing near the fire became faint, and before caught fell on the hearth. He never fully reacted, but sank on the fourteenth day, two weeks after the operation.

NASHVILLE, Tenn., Jan. 6, 1866.

ART. XI.—*On the Use of the Hypersulphite of Soda in Intermittent Fever.* By THADDEUS L. LEAVIT, M. D., of Germantown, Pa.

INTERMITTENT fever and its analogous affections result, as is generally believed, from a contamination of the blood caused by the introduction into it of organic poisons, generated by heat and the decomposition of vegetable matter, constituting the marsh miasma of writers. These vegetable germs or sporules, floating in the atmosphere of malarial regions, each one in itself a living organic power, on entering the circulation act as a ferment, and the oft-recorded results follow—the disturbance of the nerve centres, the blood thrown upon the internal organs, the chill, the reaction, Nature's mighty effort to establish an equilibrium in which she overshoots the mark and fever follows; then the pouring out of the watery constituents of the blood in the sweat, the debility, &c. &c. This theory of the fermentation of the blood, though not by any means a new idea, is not universally believed, though indirectly proved by the success of remedies exhibited.

Dr. Samuel Jackson, of this city, taught this doctrine in his late lectures at the University of Pennsylvania, and enthusiastically believed in the correctness of the theory of this ferment existing, as the materies morbi, in the blood of the intermittent fever patient, and that any remedy that arrested and neutralized this action wrought a cure, hence the efficiency of cinchona and its preparations. The powerful property of the sulphite of soda as an antiferment is a domestic fact well known to the farmer, who, by its addition, preserves his cider sweet for months.

Acting upon these principles this new remedy was administered with the following results:—

Miss M——, æt. 19, who resides in a malarious district, was attacked with remittent fever, and continued for a few days without any medical advice, feeling miserable and unfitted for any duty. Finally the chill set in fairly, morning, noon, and night, with scarcely a cessation of a few minutes between the stages. Sulphate of quinia was administered immediately in varying doses, and its constant use continued until at the end of four weeks the stomach became intolerant and not the slightest influence on the regular routine of chill, fever, and sweat was perceptible; the patient also suffered from excessive nervousness, which, of course, somewhat complicated her case. Quinia was again, after two days' suspension, renewed, but with no remediable effect.

October 12. This afternoon I began with fifteen grain doses every three hours of the hyposulphite of soda in solution with a little orange flower water, which formed quite a pleasant preparation, to be continued through the night. At my visit the next morning at eleven o'clock, the pulse was eighty-four beats in a minute, and no chill had been felt, the first omission in the exacerbation for over four weeks.

The sulphite was continued for three days, and then at longer intervals, and effected a perfect cure.

In those cases which resist the beneficial influences of quinia, the hyposulphite will prove of great value, while its rapid absorption and speedy action render it in congestive and malignant types, where relief must be furnished immediately, a prompt and efficient remedy. The principle of its action holds good in all diseases of blood poisoning and of zymotic origin; hence the success of Polli of Milan, Cummins of Cork, and others. The gradual decay of the cinchona tree and the increasing scarcity of its preparations warn us to seek in time a substitute for this most valuable drug. I firmly believe we have found it in the hyposulphites.

ART. XII.—*On the Treatment of Certain Chronic and Acute Affections of the Skin by means of the Chloride of Iron.* By BEDFORD BROWN, M. D., of Washington City, D. C.

I DESIRE to call the attention of the profession to the value of the chloride of iron, as a remedial agent in the treatment of certain acute and chronic affections of the skin. The applicability of any single remedy to affections of such varied origin, character, and progress, and yet involving an individual organ, as the skin, obviously implies a great diversity of medicinal property. But few remedies will be found to possess this diversity of property in a higher degree than the chloride of iron. Combining active tonic and alterative virtues, with a very remarkable power for the control of certain local inflammations, probably due to very active astringent or hæmostatic properties, the adaptation of this article to the treatment of the protean affections of the skin, would at once suggest itself. A very considerable experience with its use in the treatment of cutaneous affections, has satisfied me that but few remedies, if any, possess in a higher degree such decided virtues, or a more extensive range of application in the treatment of this class of diseases, than the chloride of iron. It is equally applicable to the acute or chronic forms. The skin being an organ remarkable for its abundant supply of vessels, *vascular dilatation* plays an important part in the history of its diseases; in the more chronic forms acting as an element for the perpetuation of morbid action, while in the acute it becomes greatly accessory to its superficial extension or diffusion. To what extent the morbid processes of eruption and engorgement are dependent on each other, or perpetuated by this pathological state of vascular dilatation in chronic affections is a question of considerable interest.

Doubtless the extreme liability of the skin to morbid affections is due to a very high degree of vascular organization. It comprises a great capillary system within itself. Hence from the numerous irritating causes to which this great vascular network is being constantly exposed, engorge-

ments easily arise, vascular dilatation as easily follows and becomes chronic. Medical treatment in this class of affections is constitutional, or alterative, or local and astringent. I propose now to bring to the professional notice the employment of a means combining in a very great degree active alterative and astringent properties to be used internally as a general remedy in diseases of the skin, and by virtue of these properties, when introduced into the circulation, and brought in immediate contact with the dilated capillaries, has afforded the most gratifying results. One of the principal, if not the leading difficulty, met with in the treatment of affections of the skin, particularly the chronic forms, is the constant tendency to vascular dilatation, with the usual consequences, thickening and induration of tissue.

The employment of the chloride of iron internally as a potent means of controlling vascular action for the arrest of hemorrhage, purulent and serous discharge, is a time-honoured remedy. But to suggest its application as an internal remedy for the several classes of cutaneous disease on the same principle, I am aware may give rise to controversy.

The action of this agent on the extreme vessels, when introduced internally, is of so prompt and decided a character as to induce the belief that it suffers but little chemical change in its passage through the circulation. Indeed its action, when administered either internally or externally, only differs in degree, such is its certainty. As previously stated, one of the leading considerations in the treatment of cutaneous affections is the control of the active and passive forms of vascular dilatation. It is excessive engorgement which converts the discreet into the confluent form of smallpox. It is passive engorgement or dilatation, which converts a transient cutaneous affection into a chronic form, of a duration often measured by years. What is termed the *hæmostatic* power of the chloride of iron, which consists in a peculiar action on both vessels and fluids, tending to diminish the capillary circulation, and the arrest of hemorrhage, affords an interesting example of a principle of action, which can with equal propriety be applied to the control or regulation of the identical capillary circulation under circumstances of dilatation, engorgement, or inflammation. The simple fact, which is incontestable, that this preparation has the power to arrest or diminish the secretion or excretion of pus, or the exudation of lymphous matter, is sufficient evidence of its influence over the operation of those principles involved in the process of inflammation. As a conclusive example of this influence over vascular action, and even blood metamorphosis, and the process of nutrition, the following case is noted:—

Mrs. W——, a woman of sixty years, had been suffering for more than two years from aneurism of the arteria innominata, which had grown to dimensions greater than a hen's egg, encroaching on the surrounding organs, and impairing their several functions greatly. The chloride of iron was prescribed in doses of forty drops four times per diem, and persevered in for a period of four months. Under the favourable influence of this treatment the tumour gradually diminished, while the abnormal action of

both heart and artery subsided correspondingly, affording inestimable relief and comfort to the suffering patient. When the treatment was suspended scarcely a vestige of the tumour remained, while the general health was thoroughly renovated.

The treatment and subsequent results in this case afford indubitable testimony of the power of the chloride of iron over the action and dilatation of the larger class of vessels, and is of a character to induce the belief that it is one of the most valuable remedies in aneurism in our possession.

The remedial power of chloride of iron for arresting the progress and extension of cutaneous inflammations.—Doubtless the *diffuse* character of cutaneous inflammations, and also the tendency to assume the chronic form, are due in great part to excessive vascular communication, and a low standard of blood plasticity or nutrition. Impoverishment of blood, and decline of the blood-making powers, are such common accompaniments of cutaneous affections as to need no comment here. Indeed it may be held as a principle that in diffuse inflammations of the skin, with tendency to rapid extension, the nutritive or plastic materials of the blood are deficient; while at the same time a high standard of blood plasticity constitutes an element for the limitation or circumscription of such inflammation. For the purpose of promoting these favourable blood changes we possess no agent more active than this preparation of iron. It is equally applicable to the acute or chronic forms of cutaneous affection, as variola, erysipelatous affections, carbuncle, chronic pustulous or vesicular eruptions.

After this brief but general statement in regard to the value of chloride of iron in affections of the skin, it becomes proper now to treat of the more special application of the remedy.

Action of chloride of iron in confluent and malignant forms of variola.—As a general thing, though not always, the extent of cutaneous inflammation and suppuration, arising during the progress of smallpox, denote the gravity of type. Hence in the management of this affection, the condition of the skin becomes the absorbing consideration.

During an extensive experience in epidemic smallpox, from previous knowledge of the peculiar action of chlor. ferri in diffuse or erysipelatous inflammations, I was induced to test the powers of the remedy in the former affection, on the principle of its influence to control, curtail, or diminish such forms of inflammation. And now, after having fairly tested the value of this remedy in the grave and malignant forms of smallpox, I am prepared to give my testimony in its favour.

The action of the remedy in all the cases tested was gradual, but apparent and decided; simultaneously modifying and diminishing inflammatory action, and curtailing the process of suppuration, as it were confining these processes to safe limits. Of its effects, not the least valuable in this disease is that on the tedious and exhausting suppuration attending it. For the amelioration of this symptom the chloride of iron, in my own expe-

rience, is incomparably superior to all other means. And here I will take the liberty of digressing from the main subject, for the purpose of stating a case in testimony of the fact.

A youth of sixteen had sustained an enormous burn of the right lower extremity, from the lumbar region to the toes, which caused the entire skin of the injured parts to slough, leaving the fascia at some points, and the muscles at others, entirely exposed. When I saw him three months after the reception of the injury, the denuded surface was covered with enormous masses of granulation, from which flowed forth incredible quantities of purulent matter daily. The patient was suffering from extreme exhaustion and emaciation, and was far advanced in hectic. Large and frequently repeated doses of chloride of iron were prescribed in connection with generous diet, I believe as much as ʒss every five hours, during the first week. Under this system of treatment the improvement was decided and progressive, and finally ended in complete recovery; and, to my utmost astonishment, there was but little thickening or cicatrization of the skin left, where before there were enormous and unsightly granulations, filled with engorged capillaries.

To return to the consideration of the treatment of smallpox; the two following cases may be stated as examples of the efficiency of the remedy.

Mrs. P., in the seventh month of pregnancy, contracted smallpox, three of her children having it at the time. Abortion occurred during the first day of eruption. The case proved to be a most malignant confluent type of disease. The entire surface was covered with eruption, extending over the throat and vaginal surface; the face and tongue were also greatly swollen; the constitutional symptoms were violent. Having, as I now supposed, a favourable case to test the powers of the chloride of iron as an agent to control severe inflammations of the skin, I eagerly embraced this opportunity to put it in practice. The remedy was prescribed in quantities of ʒss every four hours, after the operation of an aperient. Subsequently the variolous pharyngitis becoming very violent, the chlorate of potash was added. Alarming symptoms of general prostration also presenting themselves were counteracted by the free administration of stimulants.

This method of treatment was persevered in from an early period of the eruption, with but little variation, and in the usual time the patient passed through the different morbid stages triumphantly. It has been my lot to observe but few cases of smallpox of a more alarming character than this. From the enormous amount of eruption I had apprehended copious suppuration. To the contrary, the process of maturation was greatly modified, and the attending suppuration proved moderate.

It may be claimed even for the chloride of iron in smallpox, that it possesses very considerable abortive powers. In that most alarming and grave complication, where the tongue is greatly enlarged, the powers of articulation and deglutition are almost destroyed, this combination of remedies is valuable.

Mrs. M., a woman aged 55, contracted a most malignant attack of confluent smallpox, attended with all the usual indications of alarming adynamia, as great vital prostration, feeble and frequent pulse, cold extremities,

delirium, dry tongue, and diarrhœa. She was ordered the chloride of iron in doses of 40 drops every four hours, with a liberal allowance of alcoholic stimulants and nutritious diet. The system responded kindly to the action of the remedies; the type of disease soon became modified; and the patient passed through the attack with unexpected safety and rapidity. In neither of these cases did the amount of suppuration correspond with the severity of symptoms. Nor was the process of maturation fully developed. These cases are merely a representation of others of a similar character, which were subjected to identical treatment with equally favourable results.

Carbuncle.—Carbuncle, though usually not classed with cutaneous affections, yet is a malady so thoroughly involving the skin and subjacent tissue, as to entitle it to a place among them. The principle of regulating the circulation, or curtailing or diminishing it to an inflamed point—or, in other words, changing the character of *diffuse* forms of inflammation, and converting them into circumscribed forms, and establishing certain well-defined limits for their isolation by internal means possessing very active astringent or hæmostatic properties—is simply analogous in action to that of the same means when applied for the arrest of hemorrhage. In both instances the agent is brought into immediate contact with the capillary vessels and their contents. The inflammation of carbuncle is peculiarly destructive, with a strong tendency to extend to all neighbouring parts, and with no power for the establishment of fixed limits. Hence in treatment, the leading considerations are, to change the diffuse character; establish defined bounds, and promote moderate healthy suppuration; to enable the system to arrest disease, and to throw off sloughing material. For the promotion of these objects no remedy, in my own experience, acts so promptly, when given internally, as the chloride of iron.

The following case may be accepted as an example:—

Mr. H., aged 55, of previous intemperate habits, was attacked with large and very dangerous carbuncle on the right shoulder, which presented a disposition to rapid extension and sloughing. The general indications were eminently typhoid.

Chloride of iron, in quantities of ʒss every four hours was prescribed in connection with generous diet and stimulants, with the best effects. It was not long before there was a perceptible decline in the inflammatory action, while a well-defined boundary was being clearly established between the healthy and diseased parts, and the suppurative process was being modified. A very large slough was eventually thrown out, leaving a cavity behind filled with healthy granulations. His recovery was both rapid and continuous.

Chronic pustular and vesicular affections.—After a very considerable experience in the use of the chloride of iron in these classes of affection, I am warranted in the expression of great confidence in its efficacy; not only for the removal of the immediate local affection, but for the correction of those prime causes of a predisposing character. In all stages, but more particularly in the advanced stage of that very annoying and loathsome affection, chronic eczema, when ulceration and suppuration are fully estab-

lished, and the integument has become thickened, indurated, and laid open with numerous fissures, the chloride of iron treatment is followed by the best results.

For the full realization of these results, time and patience are requisite; but these are always manifested by diminution of the copious discharges, reduction of cutaneous engorgement, and a better regulation of capillary circulation, and finally by a restoration of the thickened and indurated integument. For both promptness and permanence of action, it is far preferable to the preparations of arsenic, iodine, or mercury in common use. It is particularly adapted to the tender age of children, whose delicate digestive organs cannot always tolerate the latter articles. The action of the remedy is gradual in this class of affection; but in the end success will always crown our efforts, and may be calculated on almost with a certainty, even when all other means have failed.

Impetigo and Ecthyma.—One of the most interesting features presented in the action of the chloride of iron is the remarkable influence which it exerts over the formation and excretion of pus, by operating through the channel of the circulation. Hence, through this power to control and regulate the process of suppuration, and suppurative inflammation, it is most admirably adapted to the treatment of this class of chronic affections, in which suppuration is a leading element. The action of the remedy in impetigo and ecthyma is decided and often speedy. Under the administration of the chloride of iron, I have not unfrequently observed the chronic ecthyma of children to disappear in a period of ten days. It also prevents or removes another very annoying feature in this affection, tedious ulceration.

Phagedenic affections of the skin.—In this type of diseases, which are so prone to march on in their progress of destruction, regardless of treatment, the chloride of iron, in my hands, has afforded results superior to all other means. The character of the peculiar destructive ulceration as well as the inflammation becomes changed; the progress of ulceration arrested; and, finally, granulations take the place of sloughs. In that variety of phagedena appearing during the progress of syphilis, and where the preparations of mercury become offensive to the system, and cannot be employed, I find the internal use of chloride of iron and chlorate of potash combined most valuable correctives.

Both the officinal "*tinctura ferri chloridi*" and the solution in water of the salt, have been used by me, but I regard the former as the most efficacious.

ART. XIII.—*Shoulder Presentation in Four Successive Labours—Version accomplished in the last two in the Position on the Knees and Breast.* By CHARLES C. HILDRETH, M. D., of Zanesville, Ohio.

MRS. MYER, residing in Zanesville, of German descent, of strong, vigorous, muscular habit, and large pelvic development, has had the misfortune to have the presentation of the arm in each of her last four labours. This is of exceedingly rare occurrence, and can be explained perhaps by the great capacity of her pelvis laterally, and a slight contraction of the same in the antero-posterior diameter. Mrs. M. informs me that up to this time she has been five times confined. In the first labour (occurring before she came to Zanesville) the presentation was natural, but delivery was not accomplished until the forceps were used, after many hours of suffering. The child was born living.

July 8, 1861. I saw Mrs. Myer in her first case of arm presentation. She had been in labour for two or three days, in the hands of an ignorant midwife, who had endeavoured to deliver by violent traction on the presenting arm. The husband finally becoming alarmed, sent for my friend Dr. Bell. The doctor, after getting the patient under chloroform, endeavoured to turn, but failing, sent for me in consultation. On my arrival, I found the patient greatly exhausted, the uterus rigidly contracted, the child firmly impacted in the pelvis, and dead. Getting her again well under chloroform, I also made an effort to turn, and failed. The child was too firmly impacted to be moved by my efforts. Being perfectly satisfied that the child was dead, as a last resort we agreed to amputate at the shoulder joint. This being accomplished, Dr. Bell turned and delivered without much difficulty. The patient recovered rapidly.

Aug. 4, 1862. Mrs. Myer was again confined. Dr. Bell was called, and again found a shoulder presentation. The liquor amnii was discharged, and the uterus so firmly contracted that he could not succeed in turning. After repeated efforts he sent for me in consultation. I found the patient in very much the same condition as at the first labour. We gave chloroform, morphia, the warm bath, &c., in order to relax the rigid contraction of the uterus, but without avail; we signally failed to turn. The funis coming within reach, we readily ascertained the death of the child, and again (as a last resort) amputated at the shoulder joint. Without much effort we then turned and delivered. Again the patient did well.

Feb. 4, 1864. Mrs. Myer was again confined. Her family physician, Dr. Bell, being quite ill, I was summoned to attend her. On my arrival Mrs. Myer informed me that the waters had broken on the day previous, and had been freely discharged, and that she had active pains. Making an examination I found again the arm in the vagina, and the uterus firmly contracted. Putting her immediately under the use of chloroform, with one hand over the fœtal head as felt through the abdominal walls, and the other in the vagina, I made a strong effort at version, but failed. This effort was repeated, the patient lying on the left side, and on the back. I failed in both cases to dislodge the shoulder from its position. Judging from the previous labours, and from the size of the arm in the vagina, that I had a large and heavy child to deal with, I thought perhaps the force of gravity might aid me in its delivery. Placing my patient on her face and breast

without a pillow, and directing her to elevate her hips as high as possible while on her knees, and having while in this position put her under chloroform, I again attempted version. Passing my hand into the vagina, I was much gratified to find the arm by mere force of gravity receding into the uterine cavity. The uterus was pendulous and so far relaxed that with the greatest ease I pushed up the shoulder and arm, caught the feet, and brought them through the os uteri. I noticed also that while in this position my patient made no voluntary efforts to bear down or in any way to resist my manipulations, and that my hand and arm moved around in the uterine cavity with unusual ease and freedom. Having accomplished the version, the patient was turned again upon the back, the chloroform discontinued, and a full dose of ergot given. In a few minutes I had the pleasure of delivering her of a living child.

July 23, 1865. Mrs. Myer was again confined. Being absent from home when first sent for, I did not see her until she had suffered several hours of hard labour. As usual, I found the arm in the vagina, and the uterus firmly contracted. Having no chloroform with me, I sent for it at once to the drug store. During the absence of the messenger I made an effort to turn, the patient on the back, but failed to dislodge the shoulder. I then placed the patient on the knees and breast, and with the greatest ease pushed up the shoulder and arm, caught the feet and brought them through the os uteri. Again I noticed but very little resistance on the part of the uterus, or on the part of the mother, and much less suffering than is usual in this operation. The version accomplished, the patient was again turned upon the back, a full dose of ergot given, and in a few minutes she was delivered of a living child. Chloroform was not given in this case, as the delivery was accomplished before the return of the messenger.

Remarks.—In recommending my professional brethren to try the position on the knees and breast in all cases of labour requiring version, I may perhaps be suggesting nothing new. I am well aware that Dr. Sims first suggested this position for the operation of vesico-vaginal fistula, and that it has been advised in cases of prolapse of the funis, and in cases of inversion and retroversion of the uterus; but if any author has advised this position in all cases of labour requiring turning, I must confess my ignorance of the fact. That it will be found decidedly the best position for this operation I am well convinced, and for the following reasons. 1st. We have the force of gravity to aid us. The weight of the child naturally drags the presenting part from the os uteri or pelvic cavity, and by so much relieves the impaction. 2d. The woman cannot, in this position, to any extent exert her voluntary muscles in bearing down. 3d. We get rid, in a great measure, of the superimposed weight of the abdominal viscera, and the resistance offered by the promontory of the sacrum, should any part of the child be impacted below it. 4th. The liquor amnii is much more certain to be retained until we accomplish the version. 5th. The uterus with its contents recedes from the spine, and by force of gravity tends to relax the abdominal muscles, and hence favours our manipulations. 6th. It is more than probable that in this position the uterus will be found physiologically to contract less violently and relax more readily than when

the patient is on the side or back. This has certainly been the fact in the cases so far observed. In conclusion, allow me to remark, that in our cases of version, whether podalic or cephalic, we are too apt to neglect the very decided advantage we gain from the use of the hand on the abdomen over some prominent part of the child. In the position upon the knees and breast, our external manipulations will prove doubly valuable and efficient in accomplishing version.

ART. XIV.—*Case of Ovariotomy.* Reported by JAMES E. REEVES, M. D., Fairmont, W. Va.

A REPORT of the following case has been purposely delayed in order to test the permanency of recovery. Unfortunately, it has too often happened that cases of ovariotomy have been reported as soon as the patients were taken off the operating table and comfortably placed in bed; or if not thus hurriedly, within the next few days succeeding the operation, and the report concluded by the remark that "the recovery of the patient is beyond doubt, &c.," after which we have not been informed whether death or recovery—partial or complete—was the result.

On the 12th of July, 1864, I was called to meet Dr. M. Campbell, of Parkersburg, W. Va., in consultation upon the case of Miss Maria C——, of Fairmont, and obtained the following previous history of the case:—

Patient, æt. 29; of healthy parents; height five feet four inches; average weight, when in health, 120 pounds; of delicate frame; dark hair and small gray eyes. During the past year she had menstruated irregularly—the last *return* having been in the early part of May, and it continued but a few hours, accompanied with much pain. About two and a half years ago, attracted by "stinging pains" in the lower part of her abdomen, she noticed a slight fulness in the left iliac region—somewhat tender on pressure, which continued to increase at a moderate rate until something over a year since, when her increase of size became so marked as to attract the attention of her acquaintances, some of whom were not as charitable in attributing the *cause* as they should have been. From the last mentioned date to the present, she has been gradually losing flesh and strength, has had no appetite, very often nausea and vomiting; bowels irregular; suffered constant pain through the sides and back; and, recently, has complained much from shortness of breath when lying down, for which reason she has spent most of the nights in the sitting posture.

For the relief of these symptoms, and, if possible, to improve her general condition, Dr. Campbell had prescribed alteratives, tonics, and stimulants, paintings of iodine, pressure, &c. &c., but all to no benefit.

Diagnosis.—Encysted dropsy, probably unilocular. The abdomen fluctuates distinctly on percussion, the tumour smooth and regularly protuberant, changes but little with altered condition of the patient. When

on her back, dulness on percussion at the umbilicus, with marked resonance in the lumbar region; no bulging of the sides of the abdomen. As there have been evidences of inflammatory action, adhesion to the adjacent parts is probable. In this condition, life having become a burden, and the patient unwilling to submit to the severer operation for removal of the cyst, tapping was agreed to, and the operation performed July 12th, 1864, by Dr. M. Campbell, in the usual manner. The sac contained *eight quarts* of the characteristic fluid; and after being emptied, a soft movable tumour, about six inches in diameter, could be detected, occupying principally the left iliac quarter. Injection of iodine (as proposed by Professor Simpson) to restrain refilling of the sac was considered, but not practised, for the reason that such procedure was esteemed but little less dangerous than the operation for extirpation. The patient suffered no shock from the tapping; and was placed in bed, with bandage so adjusted as to keep up firm but equable pressure. From this date she was in reporter's care. Very little fever followed; and for several days the patient expressed herself as being entirely comfortable. Her appetite improved, and a slight increase of strength was apparent; but the lapse of two weeks put an end to all her hopes of recovery. The sac from this date refilled with singular rapidity; and, by the 1st of October, she was even more uncomfortable than before the operation of tapping. Meanwhile Dr. Campbell had visited her frequently; and, to encourage consent to an operation for entire removal of the cyst, the favourable opinion of the venerable and accomplished surgeon of the U. S. Army Gen. Hospital at Grafton, Dr. S. N. Sherman, a resident of New York, who had seen the case, was obtained. The patient becoming convinced that, at the present rate of increase of suffering, she could survive but a few days, or weeks at most, and that the proposed operation, even should it prove fatal (and its terrible character was fully explained), would be preferable to longer suffering, consented to the operation; whereupon Wednesday, October 5th, was fixed for its performance.

Oct. 4. A dose of castor oil was administered this evening, and next morning an enema, by which the bowels were completely emptied. Expecting Drs. Sherman and Campbell to arrive by the 1.30 P. M. train from Grafton, arrangements were made for the operation. By this time she had become anxious for the hour to arrive when she should be placed upon the operating table, and in view of the ordeal through which she was soon to pass, manifested a heroic cheerfulness. We were then informed that Drs. Sherman and Campbell would not arrive until the next day.

At this sad disappointment the patient wept bitterly; but the morrow, Thursday, found her with spirits as buoyant as before. An enema was administered, and, in a few hours afterwards, thirty drops of tinct. opii to quiet and prevent peristaltic action.

Operation, October 6th, 1864.—Present, Drs. Sherman, and Campbell; and, by invitation, Dr. M. Dougherty, of Grafton; and Dr. William Frey, of Brandonville, West Virginia. The bladder having been emptied by the catheter, and the patient placed in bed clothed, for the operating table, temperature of room 70° F., the reporter, to whom was intrusted the administration of the anæsthetic, proceeded, at 2.45 P. M., to administer a mixture of equal parts of sulphuric ether and chloroform; but, on account of its slow effect, chloroform alone had to be employed. At 3.25, the patient was removed from the bed and placed upon a table covered with blankets; her legs, enveloped in heavy flannel drawers hanging over the end of it in such a way as to evenly expose the abdomen. At 3.30, Dr.

Campbell made the first incision—about four inches in length downwards from a point one inch below the umbilicus, directly in the mesial line. By a few touches of the scalpel, the structures along the linea alba were divided, the abdominal cavity opened, and the tumour exposed to view.

The sac was then tapped with a large trocar, and *ten quarts* of fluid, more viscid than before, evacuated. At this juncture the patient began to vomit, when further proceeding for the time was suspended. Soon, however, the stomach became quiet, and Dr. Sherman introduced his hand and found anterior adhesions to exist. These he gently broke down, and then made an attempt at removal of the sac, but failed because of the smallness of the incision. This he enlarged, so as to reach the umbilicus, by a few clips with the scissors, after which the removal of the mass was possible. But here another difficulty arose: on attempting to lift out the mass, notwithstanding the careful pressure made upon the sides of the incision by the assistants, several coils of the intestines protruded, and on attempting their return, four or five inches of the ileum was found adherent to the sac. This adhesion was broken down with the finger by Dr. Sherman with great delicacy; after which, with the scissors, he clipped off from the bowel the loose fragmentary tissue that had bound it to the sac. The bowel was then returned, the mass completely lifted from the abdomen, and the *pedicle* exposed. At this stage of the operation vomiting recurred; and in spite of the best directed efforts, a coil of the intestine protruded again; and, as before, the operation had to be discontinued for a time.

The stomach quiet, Dr. Sherman proceeded to the separation of the pedicle. Its length was about two inches and a half; width about one inch and three-eighths; and (after drawing the tumour well forward) it was transfixed with a large needle carrying a strong silk double cord, and tied on either side. The *clamp* was then applied above the constricted portion, and the pedicle separated.

Contrary to the practice of some operators, the peritoneal investment of the pedicle, corresponding to the line constricted by the ligature, was not dissected off; and the only particular care taken by Dr. Sherman, was, in passing the needle, to avoid an artery or vein, and to be sure that the ligature was tightly drawn. Having gotten rid of the sac, attention was turned to the root of the pedicle and its connections, when several little cysts, from the size of a pea to that of a filbert, were found. These were ruptured between the fingers and their contents expelled. The right ovarium was then examined, and found in normal condition. To rid the peritoneal cavity of accumulated blood and serum, soft flannels, wrung out in warm water, and made into small folds, were pressed into the abdominal cavity; and this process of cleansing continued until the flannels were returned without stain.

The abdominal incision was then closed by *five* twisted and *two* interrupted sutures—none of which transfixed the pedicle. The pins employed were the ordinary small sized steel darning-needles, which, after being passed through the lips of the incision, were cut off to the proper length. Much care was taken to bring the edges of the peritoneum exactly in contact, and to close the entire line of incision as evenly and smoothly as possible, also in tightening the silk twist around the pins. Long broad strips of plaster were next applied; and after the *clamp* had been turned in position exactly across the line of incision, with the two long ends of the pedicle ligature looped over it, several folds of soft carded cotton were laid over the entire abdominal surface, and over all, a

well-fitting laced flannel bandage, prepared for the purpose, was applied. The patient was then removed to bed (5 o'clock), one hour and a half from the time the first incision was made by Dr. Campbell. When placed in bed, she had entirely recovered from the anæsthetic; her pulse 125, regular, and of good strength, but respiration somewhat laboured; extremities warm, and no symptom of collapse followed. Complained of no pain, save a dull aching along the course of the right crural nerve. Administered *four grains* of solid opium—the dose to be continued every three hours until further ordered. To have pounded ice and toast water.

The patient having been placed comfortably in bed, attention was directed to the tumour removed. It was placental shaped—about seven inches in diameter, and weighed six and one-fourth pounds avoirdupois.

Near the pedicle, and against the body of the tumour, several small cysts about the size of a large cherry were attached by miniature pedicles not larger than a common sewing thread.

On laying open the tumour with the knife, it was found made up, in the main, of separate cells, varying in size from that of a filbert to that of a hen's egg, the partition walls tough, and resembling cartilage. The smaller cavities, sometimes communicating with each other, contained a cream or pus-like fluid; the larger, for the most part, a glutinous, viscid matter.

7th, 2 A. M. Dr. Sherman, who remained with the patient, emptied bladder with catheter. She has slept but little; vomited twice; pulse 135. 9 A. M. Resting comfortably; pulse 140; respiration 22; stupid from the effect of opium, but still complains of pain in the right thigh and leg. Says she is hungry. 12 M. Emptied bladder with catheter, which afforded her a feeling of greater comfort. Nausea and vomiting since last record. To have *two* grains of opium every two hours. Drs. Sherman, Campbell, and Dougherty bade the patient good-bye, and the case was left entirely in reporter's care. 6 P. M. Pulse 135; respiration more hurried; a few minutes since, vomiting came on; fluid ejected of fecal odour, and with it the last dose of pills (opium) was brought up. 11 P. M. But little nausea and no vomiting since last record. Skin in fine condition; respiration easy; pulse 130; emptied bladder and changed her position.

8th, 7 A. M. Suffering uneasiness from distended bladder. Catheter used. Has been comfortable during the latter part of the night, but did not sleep. Skin moist and of uniform temperature. No pain or soreness on changing her position. Pulse 120; respiration 16; but little nausea. Wants something to eat. 11 A. M. Sick, and making an effort to vomit; no pain or soreness of the abdomen; pulse 124; respiration 16; changed her position. Asks again for food. 2.30 P. M. Wants her position changed; a little nausea; respiration 18; skin in excellent condition. To have pounded ice, freely, as she will take it, and continue two grains opii every two hours. 4.20 P. M. Has vomited since last record. Emptied bladder, and changed her position. No pain or soreness complained of; respiration easy and natural; skin warm and moist; gurgling noise in the bowels, and escape of flatus; vagina cool. At 6 P. M. she was very sick at the stomach, and vomited. Evacuated her bladder with catheter, and changed her position. Complains of being very hungry. Allowed a little green tea.

9th, 4.30 A. M. Has not slept during the last two hours; has been vomiting; emptied bladder. 2.30 A. M. Been sick and making efforts to vomit during past two hours. Suffers no pain; pulse has continued 120, but is fuller; respiration nominal. Emptied bladder, and changed position to *left*

side, for the first time since the operation, but found that position uncomfortable, and after ten minutes was turned upon her back. In fine spirits. Very hungry, but nothing allowed but toast water and pounded ice, of which last she swallows a saucerful about every hour. The same dose of opium continued as before ordered. 1.30 P. M. Emptied bladder. Condition same. 6 P. M. For the past half hour has been very sick at the stomach, and vomited freely. Emptied bladder. Pulse 125; respiration normal; mind wandering. Ordered spiritus ammon. aromat. every hour. 10 P. M. Thinks she has not been so often sick at the stomach since taking the ammonia. Pulse 120; skin good; has slept a little; mind sound. Asks for *toast water or tea;* says she is "almost starving." Emptied bladder. Continue opium, spirits of ammonia, and the pounded ice.

10*th*, 2 A. M. Emptied bladder, and ordered same treatment continued. 6 A. M. Very comfortable; says the night, thus far, has been the *best* she has passed, notwithstanding she was quite sick at the stomach once or twice. Emptied bladder and changed her position slightly. 10 A. M. Comfortable. Emptied bladder and changed position. 2 P. M. Has been sleeping soundly. Emptied bladder. 6 P. M. Was sick two hours since and made an effort to vomit. Emptied bladder and changed position. Midnight. Has been sleeping an hour or two. Emptied bladder.

11*th*, 6 A. M. Says the last has been by far the most comfortable night she has spent; has had no sickness at the stomach; emptied bladder. 2 P. M. Removed dressings, clamp and pins. The abdomen flat, cool, and the line of incision above and below the protruding *pedicle* well closed and healing nicely. The dressings remained all dry, except immediately around the pedicle; no fetor. After removing the clamp, the pedicle secured in position by tying the ends of the ligature over a piece of palm-leaf. Entire condition of the patient favourable; to have small quantities of milk and chicken jelly. The usual dose of opium to be continued. 6 P. M. Has had distressing nausea since the dressing, and once vomited freely. Feels a little soreness along the line of incision. Expresses her thanks for an increased allowance of food. Position on the back since the dressing; emptied bladder; urine pale; the usual quantity (4 oz.) drawn off. Midnight. Far more comfortable; wants a greater allowance of milk, which was granted; emptied bladder; continue opium and ammonia.

12*th*, 6 A. M. Patient bright and cheerful; has spent a very happy night; hungry; emptied bladder. 12 M. Evidently not so comfortable as at morning visit; pulse 128; has suffered nausea and made several efforts to vomit; no pain or tenderness of the abdomen; emptied bladder. 2 P. M. Feels decidedly more comfortable than when last seen; now and then complains of pain through the right hip. 6 P. M. More comfortable generally; has been sleeping a little; emptied bladder. Midnight. Emptied bladder.

13*th*, 6 A. M. Boasts of the good night she has spent; no nausea; very cheerful; hunger increasing; emptied bladder; to have an increased allowance of milk and chicken jelly. 12 M. Very comfortable; emptied bladder. 6 P. M. Continues to improve; says she feels well enough to be out of bed; very hungry; no soreness on pressure over the abdomen; can move her feet and legs with ease; pulse 118 and of increased strength; emptied bladder; urine not so high coloured as heretofore. Midnight. Has been sleeping soundly; emptied bladder.

14*th*, 6 A. M. Slept well last night; pulse 118 and of good strength; very hungry; emptied bladder. 12 M. Comfortable; removed dressings;

but little discharge from about the pedicle; the line of incision above and below, well closed; abdomen slightly tympanitic, but not the slightest soreness or pain on pressure; allowed *clean linen;* emptied bladder; opium and spts. ammon. aromat. to be continued; to have a half teacupful of milk at a time. 6 P. M. Has spent a delightful afternoon; pulse 118; not the slightest pain or soreness complained of on changing position; very hungry; emptied bladder. Midnight. Been sleeping soundly; emptied bladder.

15*th*, 6 A. M. Feels so well this morning that she thinks she could get out of bed unassisted; asks for greater quantities of milk and chicken jelly. Pulse 116. Bladder emptied. 12 M. Pulse 110; a little tendency to sickness at the stomach; otherwise condition as good as at last record. Abdomen slightly tympanitic; emptied bladder. 6 P. M. Removed dressings. Abdomen less tympanitic; discharge (very small) from the pedicle, without fetor; and the line of incision, above and below, perfectly closed and dry. Midnight. Comfortable; has been sleeping soundly. Pulse 106; emptied bladder by her own effort. Very hungry, and asks for more food.

16*th*, 6 A. M. Rested well last night; pulse 112; very cheerful; no sickness at the stomach. Voice markedly increasing in strength. 12 M. Was very sick and has vomited. Pulse 108; skin in good condition. 2 P. M. Examined dressings; the pedicle doing well. To have her bowels moved by injection of soap and water; and hereafter, the dose of opium (2 grs.) to be gradually withdrawn. 6 P. M. Bowels have been moved, and the effort has prostrated her considerably. To have brandy toddy, and the accustomed 2 grs. opium for the next dose. Midnight. Has slept well and feels much revived; pulse 108, and of increased strength. Bladder emptied by natural effort. Continue brandy toddy, and take one grain of opium every two hours.

17*th*, 6 A. M. Very comfortable; passed a refreshing night; pulse 104; Tongue not so dry, and thirst diminished. To have more food; animal broths, fruits, &c. Directed to make an effort to empty her bladder every six hours. 5 P. M. Spent a pleasant day. Pulse 96; very hungry. Examined dressings, and on making very gentle traction, the ligatures from the pedicle came away.

18*th*, 7 A. M. Pulse 88; during the early part of the night felt uncomfortable in the bowels, and, at her own request, an enema of soap and water was administered, which partially emptied the rectum, and comfortable sleep followed. This morning she is, as she says, almost well. To have, hereafter, *one* grain of opium three times a day, or until further ordered.

19*th*. Complains of uneasiness of the bowels, and a constant desire to stool. Ordered injections, by which the large bowels were thoroughly emptied; to have opium (1 gr. doses) but twice a day.

21*st*. She was able to quit her room, and take food more liberally. Opium was now entirely discontinued; and from this date her recovery was rapid and without drawbacks.

31*st*. Well enough to go out of doors on foot, and was discharged.

Remarks.—The reader will notice that the *after management* of this case was exceedingly simple, and that *opium* (administered largely, it is true) and the *aromatic spirits of ammonia* were the only medicines employed. The *first* exposure of the abdomen, and removal of the dressings, was on the *fifth day* after the operation, when both the *clamp* and *pins* were taken away. The second dressing was removed *three* days later; after which there was a daily examination and removal of the dressings up

to Monday (the 27th of October) the eleventh day after the operation, when the *ligature* from around the *pedicle* came away.

The bladder was emptied every four or six hours for ten days, and not over four ounces of urine allowed to accumulate at a time—a care soon found essential to her comfort. The bowels were not moved until the *tenth day*, and then by injection. For *five days* there was almost entire prohibition of food—the patient taking nothing but *toast water* and *pounded ice*—of which latter she consumed large quantities, not so much to allay thirst as to quiet and prevent sickness at the stomach—after which date, milk and chicken jelly were cautiously administered. At the expiration of six weeks she was able to run about town, and by the close of the next *seven months* from the date of the operation, she was entirely restored to health. Her *first* menstrual *term* came on the third of May, 1865, since which period she has been menstruating every four or six weeks without difficulty. At present, January, 1866, she is in perfect health, very fleshy, and engaged in teaching one of the common schools five miles in the country; and sometimes, when the weather is fine, she ventures to travel this distance on foot. Her abdomen is smooth, and at the point in the mesial line, which was engaged by the pedicle, there is not the least irregularity or contraction.

ART. XV.—*Reduction of an Inverted Uterus of Eight Months' Duration.* By THOMAS ADDIS EMMET, M. D., Surgeon to the State Woman's Hospital, New York. [Read before the New York Obstetrical Society, March 6, 1866.]

Dr. GOULEY, on the 17th of February last, requested Dr. Noeggerath and myself to see a case of inverted uterus under his charge in St. Vincent's Hospital of this city. With his permission I have reported the case, from the fact that the reduction was effected by the method proposed by myself and described in full with a successful case in the last January number of this journal. The patient was about twenty-four years of age. In June last, at full term and in perfect health, she was delivered of her second child by a very rapid labour, in which she had but one severe expulsive pain, just as the head was expelled. Until within a few moments previous to delivery, she had not found it necessary to lie down. The after-pains came on at once; they were severe, and lasted longer than had been the case after the birth of her previous child. From a short time after delivery until the reduction, there had been a constant show, which frequently amounted to a hemorrhage, and she presented the appearance of one who had been suffering from an excessive loss of blood. Her condition had been attributed to the existence of a polypus, which was supposed to be protruding from the os uteri, and she had been sent to the hospital for the purpose of its removal.

After much difficulty, the patient was gotten under the influence of ether by Dr. Ward, the house surgeon, at half-past two o'clock P. M. An examination was then made by one hand in the vagina, lifting the uterus above the pubes, and the other hand on the abdominal parietes; the two were thus so closely approximated as to leave no doubt in regard to the true condition.

Dr. Gouley, as well as Drs. Wm. H. Van Buren and Moses, who were present, concurred in the opinion of Dr. Noeggerath and myself. At my request, Dr. Noeggerath, after Dr. Gouley, attempted the reduction by his method of depressing one side into the canal and carrying this portion up first, as described in the note appended to the case reported in the last number of the journal. After an attempt of some fifteen minutes, he found it impossible to indent the body sufficiently, and desisted. I passed my hand into the vagina, and, for a while, endeavoured to put into practice his method, but found it impossible to do so to any extent. In fact, the organ was so dense, and was contracted to so nearly its natural size, that the case was not a fair one for testing his mode, nor was it one which could have been reduced by pressure at the fundus, as proposed by Prof. White, while it was in every respect favourable to the method I resorted to. With the left hand in the vagina, the four fingers were passed as far up as possible between the inverted portion and the neck, with the thumb in front, so that the body was encircled by the fingers, and the fundus rested in the palm. Then, with an upward and outward pressure at the same time, the neck was gradually dilated until the seat of inversion was reached by the frequent extension of the fingers. This manœuvre was persevered in, while during the whole time the organ had been lifted above the pubes, so that the other hand could assist in the rolling out of the parts by sliding upwards the abdominal walls, with a steady pressure over the posterior portion of the ring formed by the inversion. In less than half an hour the mass, as felt through the abdominal parietes, had doubled in size, the depression in the centre had become larger, and the shape changed from a circle to an oval. The fundus gradually passed entirely within the cervix, but, after this, the progress as appreciated from the fingers within the uterus was almost imperceptible, but the rapidly increased size of the mass and the diameter of the depression at the seat of inversion was recognized by all present. At the end of an hour, my hand in the vagina became so powerless, that without the aid of the hand over the abdomen, I was unable to feel the body of the uterus within its grasp. I finally requested Dr. Noeggerath to relieve me, and, by his continued manipulation, in about ten minutes the reduction was completed, after a conjoined effort of an hour and twenty minutes. The patient has continued to do well up to the present time, and has not had a bad symptom.

In consequence of the continued action of the fingers necessary, I am satisfied that it is beyond the power of endurance for one person to complete the reduction unaided in a case of long standing. I fully recognized the necessity insisted on by Dr. Elliot, as reported in the history of the previous case, that a change of hands should be frequently made, and I believe that the progress of any case would be materially increased by fresh aid every fifteen minutes.

This mode of reduction is of great interest, for it is applicable to all conditions of inversion of the uterus, while it has been successful after the other methods had failed, and the principle is certainly correct in returning first the portion last inverted. The aid of the other hand in steadying the uterus, and to assist in rolling out the inversion, is a most important feature. It is calculated, also, to lessen the risk of inflammation of the vagina if not of the uterus, for I have seen the vaginal wall lacerated and the attempt abandoned where the pressure was made at the fundus and the vagina put on the stretch, with no counter-resistance beyond the strength of its own walls.

TRANSACTIONS OF SOCIETIES.

ART. XVI.—*Summary of the Proceedings of the Pathological Society of Philadelphia.*

1865. *September* 13. *Remittent Fever; Albuminous Urine; Pigment in Blood; Death; Pigment in all Tissues of Body.*—Dr. WM. PEPPER read the following history of a case of this character:—

1. Franklin Bean, æt. 27, born in Maine, was admitted to the Pennsylvania Hospital September 10, 1865. Had been captain of a vessel running between Philadelphia and Georgetown, South Carolina; and, on the trip up, when all of his crew but two were seized with malarial fever, he with the two men worked the vessel to this port, so that by the day they arrived—Saturday, September 2, 1865—he was utterly exhausted—mind and body. He had a chill on Monday morning following, and was forced to go to bed on Wednesday, September 6. He has had no second distinct chill, but a continued febrile action with marked but somewhat irregular remissions. There has been occasional bilious vomiting, constipation of bowels, but neither cough nor epistaxis. On admission, at 10 A. M., his symptoms were those of intense prostration; there was considerable hebetude with occasional delirium, but generally he could be roused to answer; constant restlessness and jactitation, with painful feeling of præcordial oppression. Respiration sighing; pulse small, 108 a minute; tongue dry, but not heavily furred; belly tympanitic, showed no eruption; spleen somewhat enlarged; liver of normal size, but sensitive to pressure. His skin was hot and dry, and he evinced great thirst with utter anorexia. On morning of admission he took cinchonia sulph. gr. xxxvj, and whiskey at rate of f℥xv daily.

11*th*. There was still marked hebetude with jactitation. The heat of skin less, with more moisture; tongue very dry; respiration irregular, shallow or sighing; pulse 110, small and feeble; belly still tympanitic, although the bowels had been opened by an enema. Blood drawn from finger showed about normal average of white corpuscles; red corpuscles pale, many of them crenated, with several large black pigment masses. Cinchon. sulph. gr. xxx; whiskey f℥xxiv daily.

Toward night a distinct remission occurred; skin grew cold; pulse became smaller, and ran up to 148 in a minute, when he had quinia sulph. gr. xxiv, and additional stimulus with ammonia carb. gr. v, q. h. and external heat constantly applied; partial reaction was thus brought about, but the following morning, September 12, 1865, his pulse was again 145, and very feeble; delirium alternating with deepest hebetude; thirst gone; bowels quiet; skin hot and moist (temperature in right axilla 108° F.), on extremities shrivelled; pupils dilated; quinia sulph. gr. xxiv; stimulus and ammonia as before; prostration steadily increased; vomiting came on at 4 P. M.; convulsive movements at 5½ P. M.; death at 6 P. M.

Post-mortem four hours after death.—Body not much emaciated, but unusual rigor mortis.

Brain.—Darker than in health, somewhat congested on convexity. About half an ounce of effusion at base. Veins of cerebellum congested.

Thorax.—*Lungs* entirely free from adhesions; deeply congested posteriorly in lower lobes; heart healthy; muscular fibre red and firm; f℥ij serous effusion in pericardium.

Abdomen.—Stomach healthy. *Small* intestine was moderately distended by gas; contained fair amount of semi-solid feces, and had a large quantity of viscid mucus adhering to its inner coat. Toward the lower part of the jejunum a large number of reddish points were seen, but slightly elevated, evidently congested solitary glands. In the ileum the solitary glands were prominent and red, but none of them ulcerated. Peyer's patches were more distinct than usual, even up to the upper end of ileum, whilst toward the ileo-cæcal valve they were congested and very evident; but in no instance was there either abrasion of the mucous membrane, nor marked enlargement of gland elements. *Large* intestines presented no lesion; mesenteric glands not enlarged.

Liver was not enlarged, contained a great deal of blood, and was much mottled on outer surface, and in places, especially over left lobe, was decidedly bronzed. On section, the cut surface was glistening—presented neither prominence nor very marked congestion of acini—in colour, lighter than normal, but bronzed. Gall-bladder moderately full of black inspissated bile. Under microscope the liver cells were seen to be of good shape, containing one or two distinct nuclei, and dark-reddish granules, highly refracting, but irregular and angular in shape; there was also a great deal of floating granular matter and free masses of pigment. The bile contained the epithelium of gall-bladder, brown yellow granular matter and pigment masses.

Kidneys much congested. Urine drawn from bladder was decidedly albuminous, depositing granular casts, epithelial cells, fibrinous flakes, and pigment masses.

Spleen three times normal size, soft, and, besides normal elements, contained reddish granular fibrinous flakes; large free pigment masses and cells (in size and granular nature very much resembling white corpuscles of blood), with pigment granules apparently even in the nucleus; certainly the granules were in the cell contents.

Blood from portal vein, just above junction of splenic vein, contained many crenated corpuscles, a normal or slightly increased average of white corpuscles, and large black pigment masses.

Blood from vessels on convexity of brain contains crenated corpuscles also with hæmatine masses of same size and shape as those in other parts. It is to be regretted that circumstances prevented an examination of the brain structure itself.

Sept. 27. *Acute Infiltrated Tubercle Associated with Malaria; Death in Twenty Days.*—Dr. WM. PEPPER read the following:—

Arthur Pierson, æt. 18, was admitted to Pennsylvania Hospital at two P. M., September 16, 1865. He was born in England, of healthy parents, and for several years past has been following the sea. He arrived at this port from Liverpool about the middle of August, since when the vessel has been lying at one of the wharves in Richmond. He remained perfectly well until three weeks ago, when, as he was working in the hold of the

ship, he was seized with violent frontal headache, vomiting, and prostration. He immediately retired to bed, and has remained there since. He seems not to have had any distinct chills nor even marked remissions; the bowels have been loose; no epistaxis; moderate pain in chest without cough until four days ago, when cough appeared with at first a slightly rusty sputum, but since then, without coughing very much, he has expectorated large quantities of glairy, yellowish-gray somewhat nummular sputa.

At 4 *P. M.*, when first seen, he was lying on right side, breathing rapidly. No emaciation of body was noticed; the face was sallow, not much flushed; the eyes dull, and there was considerable hebetude, although he could be roused to answer questions correctly. The tongue was dry and coated; slight sordes on teeth; the belly meteoric, but showed no eruption. There was slight increase of hepatic dulness with tenderness on pressure, but no marked splenic enlargement. Skin hot and dry; respiration very frequent; pulse 120 in a minute and feeble. There was no very severe cough, but frequent expectoration of large frothy sputa of glairy muco-purulent matter, containing some oil, squamous epithelium, large granular singly-nucleated cells and few blood corpuscles. *Physical signs* on right side were somewhat impaired resonance throughout; vocal fremitus and vibration marked. Respiration was rude over upper lobes anteriorly and posteriorly, with occasional sonorous and sibilant râles, and over lower lobe attended with fine crepitation limited to inspiration. On left side, percussion note was flat over upper lobe, anteriorly and posteriorly; over lower lobe anteriorly there was very slight resonance, but posteriorly it was again flat. Auscultation revealed over upper lobe fine crepitation limited to inspiration with obscure bronchial respiration; during expiration the crepitation seemed replaced by dry and moist râles in larger tubes; over lower lobe anteriorly there was coarse moist crepitation heard during both inspiration and expiration, with diffuse imperfect blowing respiration. The cardiac sounds were almost entirely masked by this crepitation. Vocal fremitus was increased considerably over lower lobe, and the vocal resonance slightly bronchial, but not very loud nor distinct. The movements of respiration were chiefly conducted by right lung, the movements of expansion of upper ribs and elevation of entire thorax being marked, whilst on left side the movement of expansion was absent, slight elevation being the only evidence of any respiratory effort. Dry cups were freely applied to back, and the whole thorax surrounded by a poultice. Whiskey f℥j with ammoniæ carb. gr. v, were given every hour.

8 *P. M.* Has rapidly sunk; there is now wandering delirium; hot, dry skin; respiration shallow and jerking, 63 a minute; pulse 156, a mere thread (pulse-respiration ratio 1 to $2\frac{1}{2}$). Physical signs as before, excepting that expectoration has nearly ceased and there are more large mucous râles mixed with the crepitation. Death at 3 A. M., September 17, 1865, thirteen hours after admission.

Post-mortem six hours after death.—Body not much emaciated; surface sallow. Nails slightly clavate. Neither brain nor spinal cord examined.

Thorax.—Intense and minute congestion of both pleuræ and pericardium. Each pleural cavity contained nearly one pint of serous effusion, and there were a few points of recent lymph.

1. The right lung was collapsed, but was quite readily inflated and crepitated throughout. On section it presented an unusually smooth surface of a bright arterial red, and in a few places, especially in lower lobe, there

were small particles of indurated tissue slightly prominent and on section minutely granular, and of a reddish-slate colour.

2. The *left* lung was in a position of almost entire distension, resisting pressure when grasped, and crepitating only along anterior margin of its lower lobe. Powerful inflation distended the lower lobe slowly to almost its full extent, but made no change in size of upper lobe. Over external surface of this lung there were slightly raised grayish patches, seen well by contrast with purple tint of the rest of the surface. On section of the lower lobe numbers of the same indurated nodules were seen as in right lung, but the structure was more granular and pouting on section. The entire tissue was dense, and had a homogeneous appearance as though the vesicles and intervesicular spaces were alike infiltrated with a reddish-gray matter. The upper lobe presented these appearances in even a more marked degree, was very dense, and on section glistening, indistinctly granular, reddish-gray or in places bright red or pinkish. Within a half-inch of the apex there were three vomicæ, one large enough to hold a filbert, the others the size of a pea, containing a little grayish matter and with rough, softened walls. The bronchial tubes in both lungs were much congested and inflamed. The bronchial glands greatly enlarged, some of them two inches long, firm and filled with cheesy matter. All parts of the right lung floated well on water; a slice from lower lobe of left half sank, but any part of the left *upper* lobe sank instantly.

No pericardial effusion. Heart normal.

Abdomen.—The *liver* was found somewhat enlarged, turgid, imperfectly bronzed, and contained large black granules of pigment.

The *spleen* was double normal size, soft and dark, and contained a great deal of pigment.

The *kidneys* were intensely congested. The urine drawn by catheter was highly albuminous, very deficient in chlorides, and deposited vesical epithelium, granular tube casts, and large black pigment granules. There was no lesion in *large* intestine, whilst in the small bowel Peyer's patches were merely slightly prominent, and the lowest patch had a superficial ulcer upon it of size of a small pea.

The *mesenteric glands* were enlarged to the size of a plum-stone, firm, mottled externally, and filled with the same cheesy matter as the bronchial glands. Tubercle corpuscles were clearly detected in mesenteric and bronchial glands and in both lobes of the left lung. Exudation corpuscles were also found in the lung tissue.

Dr. WM. PEPPER also read the same evening the following case:—

Remittent Fever; Death one and a half hour after Admission; Pigment in Brain, Liver, and Spleen, &c.; Albuminuria.—Lewis Shellhorn, æt. 30; born in New Jersey; was brought to the Pennsylvania Hospital Sept. 26, 1865, at 4 o'clock P. M., in a moribund condition. He was a sailor, and no history could be obtained beyond the fact that he arrived in Philadelphia Sept. 12, 1865, from the coast of North Carolina, and that he had been taken sick on the trip up, at first with quotidian ague, but before reaching this port the regular chills had ceased and the attack assumed more the type of remittent fever. Since his vessel has been in port he has been boarding almost on the very bank of the Delaware River. On admission his symptoms were these: skin cool and sallow, shrivelled in extremities; pulse barely perceptible; respirations shallow and gasping; unconsciousness, with inability to speak; deglutition very difficult. The belly was retracted; showed no eruption and no marked enlargement of either

liver or spleen. It was impossible to get a full drop of blood from the fingers by pricking them, but upon examining the little that could be pressed out, it contained numerous white corpuscles, a deficient number of red corpuscles, which were crenated and running together without forming rouleaux, and several black but rather small pigment masses.

He was roused to swallow quinia sulph. gr. xxxv, and whiskey f℥iv before his death, which occurred at 5.45 P.M. of same day, one hour and three-quarters after admission.

Post-mortem four hours after death.—*Spinal* column not examined.

Brain not much congested; cortex dark; white substance of a dull grayish colour; no effusion into ventricles nor at base; substance quite firm. Pigment granules were found in every portion of brain, in a few places large and free, but by far the greater portion were in the capillaries, at some places dotting their walls, at others collected into small plugs, filling the calibre of the vessel.

Thoracic viscera healthy, excepting congestion of lower lobes of lungs.

Abdomen.—The *stomach* was congested internally, and the mucous membrane somewhat thickened and in places of a slate colour. The *intestines* were much contracted and contained almost no fecal matter; no glandular lesion in either large or small bowel, Peyer's patches being merely slightly congested.

Spleen was double the normal size, soft and dark. Its pulp contained the usual elements, and in addition a great deal of granular pigment, either free or contained in the granular cells.

The *liver* was slightly enlarged, in line of nipple one and a half inch below ribs, dark and slightly mottled externally; on section presenting a fine dark olive colour. Gall-bladder was full of dark bile, but no gall-stones. The hepatic cells were of good size and shape, without excess of fat; but in every portion of the organ large numbers of pigment granules were found, either free or forming part of the cell-contents.

The *kidneys* were quite small, firm, on section grayish-red. The supra-renal capsules healthy. Pigment was found both in the intertubular capillaries, in the capillaries of the Malpighian tufts, and also free in the form of large black angular granules.

Bladder contained f℥j of cloudy urine, highly albuminious, depositing vesical epithelium, numerous granular tube-casts, and black but rather small pigment masses.

Oct. 11. *Tubercular Meningitis*—Dr. T. H. Andrews presented the specimen for Dr. WILLIAMS, and read the following history of the case from which it was derived:—

John L. Newman, æt. 35 years; discharged soldier. His illness dates back about eleven months. No known hereditary tendency to tubercle. He had occasional slight hæmoptysis, cough, frequent expectoration, pain in the chest.

At the time of admission, Sept. 11, 1865, he was thin and languid. A decided tendency to diarrhœa was noted, also a disposition to bury the head in the pillow persistently, usually upon the left side. The percussion note under the right clavicle as compared with that upon the left is shorter, of higher pitch, almost dull. The same difference in supra-spinous fossa of scapulæ. Inspiration under right clavicle harsh and accompanied with moist rales, usually fine, sometimes coarse. Expiration prolonged, harsh, at one point almost cavernous. Under left clavicle the inspiration is softer,

almost normal, but occasionally combined with fine crackling. Expiration slow and a little jerky. There is evident depression of the right sub-clavicular space, sounds similar to those in front meet the ear placed over the apices posteriorly.

Oct. 15. No marked change in his condition until last Thursday, when a little transient strabismus was noticed; complained of distressing headache, principally frontal, through Thursday, Friday, and Saturday. His bowels, previously loose, became quiet and constipated. He has lost his little remaining animation, and is now quite stupid; lies torpidly, with a typhoid fever expression of countenance; cheeks, too, are flushed and dusky; pulse 84, feeble, not tense; respirations 26; coughs little; articulates distinctly, but intelligence so much clouded that he answers very slowly or not at all, relapsing from the momentary air of attention to the question into his habitual lethargy. There is obvious drooping of the right eyelid with imperfect motion; left pupil a little larger than right; does not appear to see so distinctly with the right eye as with its fellow; moves the balls synchronously but with oscillation; says that hearing in right ear is decidedly duller than in left; hands cool; head, body, and feet warm; tongue moist, with a uniform dirty coat. Yesterday and to-day it was necessary to draw off his urine with the catheter. Pressure and motion of right cervical muscles induce an expression and cry of pain. Urine acid, sp. gr. 1031; chlorides good; no albumen; colour yellow.

Blood.—Red corpuscles good; several black angular grains of pigment; rouleaux formed in masses; no increase of white cells.

Temperature at 8 P.M. Sept. 19th: right axilla 102°.75 with pulse of 108; resp. 36. 8 P. M. Sept. 15, 101°.25. 9 P. M. Oct. 2, 102°.50; pulse 92; resp. 32.

Treatment.—Cod-liver oil, tr. cinchonæ comp., liq. arsenici chloridi gtt. v., with tr. ferri chloridi gtt. xv. t. d.

7th. Stupor increasing. There is inspissated pus in the meatus of right ear.

8th. Semi-comatose, will not answer questions; subsultus about the jaw, and picks the bedclothes; obvious convergent strabismus; pulse 84; respiration 36, often puffing and with low plaintive moan in expiration; bladder still inactive; fresh pus in concha of right ear.

9th. 10 A. M. moribund; pulse very variable in frequency, always feeble, running from 92 to 140; respiration 36, slightly stertorous, intermittent, and entirely diaphragmatic; ribs descend instead of being elevated during inspiration; but little of the pulmonary tissue above the base can be expanded; hand upon the right side of chest detects a fremitus due to the passage of air through the softer matter within; left pupil a little larger than right, both almost fixed. Died at 8½ P. M.

Autopsy twelve hours after death.—Cadaver emaciated; face dusky red; skin elsewhere pale.

Thorax.—Right pleural cavity obliterated except at apex; no adhesions upon the left side, but the hand everywhere detected hard shot-like grains of sub-pleural tubercle.

Lungs very bloody; tubercle active; in left lung disseminated throughout and not softened, except in one or two inconsiderable points in the centre; right lung stuffed with tubercle in various degrees of softening, more advanced above where were formed *anfractuous* cavities with small chambers.

Heart healthy, auricles and ventricles well filled with clots.

Abdomen.—Spleen not enlarged, of good consistence, pale, grayish red. *Kidneys* hyperæmic but healthy.

Liver not large; colour mottled yellowish. Supra-renal capsules large, apparently normal.

Intestine in part dark and congested, above pale or greenish-yellow and containing bright yellow feces; irregularly shaped ulcers size of a thumb-nail with puckered edges and not much surrounding congestion, scattered throughout jejunum; in ileum, solitary glands enlarged, ulcerated away, and longitudinal ulcers corresponding to position of Peyer's patches. These had usually the muscular layer for their floor, abrupt edges, and contained partially destroyed granular points. There was occasional sub-peritoneal deposit of tubercle immediately behind the floor of these ulcers. In *large intestine*, glands enlarged; ulcers fewer; mesenteric glands somewhat enlarged.

Cranial Cavity.—Great hyperæmia of meninges, particularly upon the convexity; both veins and arterial branches distended; no marked sub-arachnoid effusion or at base of brain; ventricles filled with fluid, clear, serous, f℥iij in right, f℥v in the left; arachnoid membrane upon the convexity slightly opalescent, but smooth and without lymph; anterior cerebral lobes abnormally adherent, their attached surfaces granular. In the various fissures at the base of the brain fine clear or whitish granulations with thickening of the membrane, a little free lymph. The mamillary eminences were obscured and optic commissure bound down by a thickening, almost colloid or mucous in appearance. This condition particularly marked about the origin of the pneumogastric and spinal accessory nerves.

Microscopical Appearances.—*Heart* structure healthy. Characteristics of tubercle in lung deposit. *Liver cells* well nucleated, oil globules too abundant. *Spleen*, pulp normal; uriniferous tubules healthy. Granulations at base of brain distinctly tubercular in structure. Pus in ear from abscess in meatus.

Spina Bifida; Fatty Kidney.—Dr. PACKARD related the following case: Kitty R., æt. 4½ years, was the subject of spina bifida, and had never had the use of her lower limbs. I was called to see her September 21, on account of extreme ascitic distension of the abdomen, with anasarca, and puffiness of the face. Her pallor was excessive. Tapping had been proposed at a public institution to which she had been taken, but, as I had attended in the family before, they desired to have me do it. I accordingly drew off about four quarts of clear glairy liquid. Some relief was afforded by this, but the cavity soon filled again. Bedsores had been forming for some time, and her weight, with the distension by the accumulating liquid, greatly aggravated them. Her thighs became gangrenous, and she died worn out, Oct. 7.

Autopsy about twelve hours after death.—All the abdominal organs seemed absolutely healthy except the kidneys, which were about twice their normal size, and fatty. Under the microscope the epithelium in the tubes of the cortical portion seemed degenerated, many minute oil-drops being present here and there.

The spina bifida was just over the upper part of the sacrum, which formed nearly or quite a right angle with the lumbar portion of the spinal column. The posterior part of the sacrum was wanting, a wide cavity being covered in by fibrous membrane, over the anterior (inner) surface of which was spread out the cauda equina. About two inches of fat covered

the sac, which was much smaller than would have been supposed from its external appearance. At one point there was a prominence about as large as a walnut, which seemed on section to be constituted by a sort of fibrous growth in the skin.

This deposit of fat and fibrous tissue would have seriously interfered with any operative procedure, had such been attempted; although they did not prevent as perfect fluctuation in the tumour as if the skin and the sac had been in close apposition.

Both thighs were almost immovably flexed on the pelvis, at an obtuse angle, just as they had been during life. It seemed as if there were a double congenital luxation on the dorsum ilii, probably connected with the spinal lesion; but I did not venture to verify the opinion by dissection.

Oct. 25th. Fracture of Base of Skull.—Dr. WM. PEPPER read the following: George McIntosh, æt. 11, a strong, well-developed boy who has been working as shop-boy in a large wholesale store on Market Street, was admitted into the Pennsylvania Hospital at 4½ P. M., Oct. 19, 1865. Half an hour previously, whilst playing on the third floor of the store, he fell through the hatchway. The foreman who carried him in was uncertain what part of his body struck first. On admission he was found to be entirely unconscious, so far as intellection was involved; thus it was impossible to rouse him to reply, to open his eyes, or to make any movement directed, but whenever his head was touched or the surface pricked, he would make quite powerful, semi-voluntary movements with both arms and legs, as if to remove the annoyance. There was no injury to any part below the head, but it appeared that he had fallen head foremost, striking over frontal bone, to the right of the median line, for in this region, extending also over to the left temporal fossa, the scalp was doughy; and although no crepitation could be detected, the absence of resistance to pressure, and the extent of contusion of the external parts indicated serious injury to the skullcap in this region. In addition, there was intense and steadily increasing ecchymosis of right eyelids, but none of the eyeball, although there was marked chemosis, associated with free hemorrhage from both nostrils. No discharge had taken place from either ear. He had occasional vomiting. Pulse 48 in minute, laboured; the respirations 26, snoring. The decubitus was left lateral, with strong tendency to roll over on the face. Deglutition was still possible. His head was shaved, ice applied; a large blister placed on back of neck, and stimulating enemata administered.

7 P. M. Pulse 50, weaker; respiration 30, still snoring (pulse—respiration, ratio 1 to 1⅔). Increased ecchymosis of the right orbit; deglutition still possible. He is now entirely unconscious, but reflex actions can be aroused in all parts by pricking the skin deeply. Bowel retentive; no discharge of urine; surface cool.

9½ P. M. Respirations irregular, 24 in minute, entirely abdominal; inspiration accompanied by a very loud singultiform crowing sound; expiration forcible and short; pulse feeble, and has run up to 117 in minute; reflex movements are more difficult to arouse; left pupil dilated and insensible; the right one also dilated and almost insensible, none of the muscles of the face could be roused to contraction; bladder completely paralyzed; the bowel still retains the enemata. Soon after this, the pulse ran up to 160, and grew very small; the respirations became jerking, with divided inspira-

tions, and the lungs rapidly clogged with mucus. Death occurred at $10\frac{3}{4}$ P. M., $6\frac{1}{4}$ hours after admission, $6\frac{3}{4}$ after accident.

Post-mortem twelve hours after death.—Discoloration of scalp over the upper part of the frontal bone and anterior part of parietal bone, and extensive apoplexy of occipito-frontalis muscle. There was no fracture of superior part of frontal bone, but it was separated from its articulation with both parietal bones and the squamous portions of both temporal bones, but from the termination of the separation on the right side, a fissured fracture could be traced inwards through the orbital plate of right frontal bone, three lines from its posterior edge to the small wing of the sphenoid bone, and thence downwards forming a radiated comminuted fracture of the posterior wall of the orbit. A large clot of blood, caused by laceration of the anterior meningeal artery, lay upon the right anterior lobe of the brain, compressing it inwards and backwards. There was no laceration of brain tissue, and but a very slight effusion at the base of the brain. Abdominal viscera congested slightly; lungs deeply congested posteriorly; on the left side the pleural cavity was obliterated by old adhesions; heart healthy, containing very little clot; blood less coagulable than in health; bladder distended with very pale urine.

Fracture through Squamous and Petrous Portions of Right Temporal Bone, causing Rupture of Arteria Meningea Media; Effusion of large Clot of Blood.—Dr. WM. PEPPER read the following history: Thomas Hughes, æt. 16, shoemaker by trade, was admitted to surgical ward of the Pennsylvania Hospital at $9\frac{1}{2}$ P. M., Oct. 10, 1865. The only history that could be obtained, was, that he had been engaged in a fight with a number of boys and had received a severe blow from a club or billy over the right temporal bone, about $1\frac{1}{2}$ hour previously. There was no noticeable tumefaction nor discoloration of scalp over right temporal fossa: but a free discharge of bloody serum from the right ear had taken place. On admission, the surface was cool, and he evinced a marked tendency to stupor, although he could be roused to open his eyes partially, and he occasionally screamed violently and raised his hands to his forehead as though suffering acutely. The pupils are slightly sensitive to light, and moderately dilated. The face drawn a little to right side. The pulse was irregular, 50 in minute—heart's action laboured: respirations 27 in minute—shallow and accompanied by hoarse snoring râles anteriorly. Deglutition was almost impossible, and the position of tongue could not be discovered.

Oct. 11, 1865, 8 A. M. He was entirely unconscious. The skin hot and dry, cheeks flushed; capillary circulation sluggish, and although there is no lividity of surface, a dark red colour develops itself within a few seconds over any point of pressure, or along the track made by drawing the finger over the surface (tâche méningitique.) Dorsal decubitus; face slightly drawn toward right side. The right upper eyelid was closed, and the eye divergent with dilated and insensible pupil; the left upper eyelid was drooping, but not entirely closed, the eye more congested than its fellow, but in its proper axis, and the pupil contracted and insensible; the expression of both eyes was vacant and staring. When the right eyeball was touched, the right orbicularis contracted firmly, but on the left side this muscle was entirely paralyzed. The left side of the body also was quiet, the muscles flaccid and almost entirely paralyzed, nor could any reflex actions be aroused. The right side, on the contrary, was in constant

motion—the arm and leg being rapidly flexed and extended, and in addition the fingers and toes contracting spasmodically on any object presented to them, and drawing it powerfully toward trunk; reflex movements also were active on this side. The pulse had become regular in rhythm, but is running 145 in the minute, small and very quick; heart-sounds devoid of muscular element; respirations 34 in minute, lungs expanding imperfectly, with abundant dry and moist râles. There has again been a bloody discharge from the right ear through the night, but it has ceased. There is no ecchymosis about right side of head. Neither epistaxis nor bloody discharge from the mouth has been present. Deglutition is now impossible. There is frequent suffocative cough with evident accumulation of mucus, but entire inability to expectorate. Death occurred at $8\frac{1}{2}$ A. M., 12 hours after injury.

Post-mortem six hours after death.—The boy has been of a delicate, scrofulous nature, with slight development of the osseous system. Upon reflecting a flap of the scalp, one or two small ecchymoses were seen on the pericranium over the upper part of squamous portion of the right temporal bone, with a considerable apoplexy of the right temporal muscle. A fissured fracture of the right temporal bone was found running through the tympanum into the mastoid process, and forward and upward through the squamous portion, and internally the fracture extended through the petrous portion of the bone. The arteria meningea media was lacerated, and a very large clot of blood effused *upon* the dura mater over lateral and superior face of anterior and middle lobes, and extending round orbital plate of frontal bone, involving right optic nerve. Under seat of clot there was slight subarachnoid hemorrhage. The brain substance was not much congested; the membranes were congested, but showed no sign of meningitis. No effusion at base or into ventricles. The other viscera were healthy, but much congested, especially the lungs, which were also surrounded by about Oss of serum on either side.

Nov. 8. *Gunshot Wound; Ball passing through Thyroid Gland, opening Œsophagus, perforating Vertebral Body, and lodging in Substance of the Spinal Cord; Paraplegia; Inability to Swallow; Death in* $25\frac{3}{4}$ *hours.*—Dr. WM. PEPPER read the following history: Edward Thomas, æt. 22, a returned soldier, was admitted to Surgical Ward of Pennsylvania Hospital, at 11 A. M., Oct. 30, 1865. The preceding evening, at 8 o'clock, whilst in a drunken quarrel with a younger brother over a pistol, the trigger was accidentally pulled at a moment when the barrel pointed towards his throat. The ball, after grazing the chin to the left of the median line, entered about $1\frac{1}{2}$ inch above clavicle, and 1 inch to left of median line of the thyroid cartilage, with a direction from above downwards and from left to right. He fell to the ground immediately, and upon his attempting to rise it was found that he was completely paralyzed below the arms. There was *profuse* hemorrhage from the wound, and, in addition, it was noticed that everything taken into the mouth and swallowed would run out of the opening on the neck. He has been exceedingly restless during the night, and had suffered considerably from dyspnœa.

Upon admission his appearance was peculiar; the eyes wild and restless; features sunken; pupils presented nothing abnormal. There was a superficial wound upon the nose from his fall. The wound of entrance of the ball was small, irregular, and discoloured; and the tissues surrounding it, and around to the back of the neck were œdematous and emphysematous.

On attempting to swallow any fluid, the larger part of it escaped through the opening on the neck. There was marked œdema of the posterior wall of the pharynx, and frequent collections of serum and mucus which he was unable to expectorate, but which, after it had accumulated to a considerable degree, would be expelled to a distance of several feet by a powerful spasmodic action of the diaphragm. The pulse was almost imperceptible, the cardiac impulse nearly extinguished, and the heart sounds changed, the muscular element being almost absent; the valvular sounds very weak, so that the chief thing heard seemed to be a prolonged gentle rush of blood through the cardiac orifices, unattended by murmur. The respirations were irregular—not very rapid—but entirely diaphragmatic, the motions of elevation and expansion being apparently absent. Soon after admission he was obliged to be propped up in a sitting posture, as symptoms of suffocation came on in the recumbent position. On examining more closely the paralysis above referred to, it was found to affect the entire body from the upper edge of the third rib downwards, both as to sensation and motion; from the third to the sixth rib, however, in a circle around the trunk, there was still slight sensibility remaining; thus a needle stuck deeply into the derm within these limits, and moved so as to lacerate it a little, excited a sensation of its presence, but no pain; the reflex movements in this part were also feeble. Below the line of the sixth rib, however, there was not the slightest power either of sensation or motion. The bladder was entirely paralyzed, as were the rectum and its sphincter, for enemata flowed away immediately. The movements of the head, eyes, and tongue were good, and sensation remained unimpaired. The movement of the arms also remained, but their force was less than normal; their sensibility seemed good. Reflex movements could scarcely be roused in the legs at all; the most irritating tickling producing merely a twitch which was scarcely visible. The electro-muscular sensibility was gone in the paralyzed parts, and the electro-muscular contractility much impaired. The temperature was about normal. He complained constantly of pain about head and neck, especially severe about the nucha; this pain he described as being at times of a burning, tingling character. There was a little meteorism, which increased somewhat towards evening. One grain of sulphate of morphia was given by hypodermic injection, and had the effect of somewhat easing the pain. As night came on he became slightly delirious; tore his hair; pushed everything from him, and evinced great restlessness. The respirations became steadily weaker and more irregular; the pulse could not be detected at times; and he died, Oct. 30, 1865, at 9¾ P. M., 25¾ hours after reception of the injury.

The copious hemorrhage, the direction of the ball, the escape of fluids through the wound, and the immediate occurrence of paralysis readily led to the conclusion that the ball had penetrated either the internal jugular vein or thyroid body, had opened the œsophagus, and then entered the spinal cord, cutting the cord about the third dorsal vertebra.

Post-mortem examination, thirteen hours after death.—Brain not examined. Upon reflecting flaps of skin from middle line of the neck, and raising the muscular layers connected with sternum, thyroid cartilage, and hyoid bone (through which the track of the ball could be easily traced), the thyroid gland was exposed. This body was rather larger than is usual at his age, and was perforated by the bullet through its left lobe, close to the thyroid cartilage, and rather above the middle of the gland. The sheath of the carotid artery and accompanying structures was unopened, and the de-

scendens noni nerve intact. Upon raising the gland, the œsophagus was found to have been cut open at the left side, the ball not having fairly entered it, but merely cutting a piece out of the side. There had already been considerable formation of pus, which had burrowed up the sheaths of the muscles of the neck, and had followed the œsophagus down as far as the *diaphragm*. The ball next had entered the body of the first dorsal vertebra on the left side and about its middle; traversed the body and the cartilage below; entered the body of the second dorsal, in its course from above downwards and from left to right; entered the spinal canal at a point half-way down this latter vertebra and to the right of the median line, and buried itself in the substance of the right anterior and middle columns of the cord. There was a small amount of hemorrhage into the sheath of the spinal dura mater, but not sufficient to cause any marked compression. No distinct meningitis had occurred, but there was œdema of the connective tissue outside the spinal cord. The brachial plexuses were apparently uninjured. The œdema and ecchymosis along the anterior surface of the spinal column prevented any dissection of the left sympathetic nerve.

The *lungs* were deeply congested posteriorly, some passive hydrothorax on each side.

The *heart* was flaccid, distended with blood in all its cavities.

The *spleen* was double the normal size, and quite too soft.

The *liver* moderately congested; there was no evidence that he had suffered from malarial fever, although in all probability exposed to its causes in the army.

The *stomach* was distended with gas; contained some little gastric juice with numerous pieces of meat which were quite firm, and scarcely at all digested. The kidneys were intensely congested.

The ball was a round one, about one-fifth inch in diameter, and, despite its long course through the tissues, had not been much flattened.

Cases of injury to the spinal cord, more or less similar to this one, are to be found recorded in many works; but their number can never destroy the interest attaching to them as illustrations of the principles of the pathological physiology of this portion of the nervous system. Among the questions, then, presenting themselves in connection with the case just read, is that of the proportion which the shock of the injury bore in the production of the hemiplegia. There is, perhaps, no idea more strongly suggested in the study of pathological anatomy than the tolerance of the system to many chronic diseases, the extraordinary persistence of function in organs whose entire structure has become changed by gradual morbid action. This statement, so true with regard to the abdominal and thoracic viscera, is sustained in the study of the pathology of the spinal cord by cases where the lesion has amounted to an almost complete solution of continuity, and yet, in which the function of the cord has remained almost intact. The following extraordinary instance is transcribed from Begin:[1]—

"The patient, who was a vigorous man, and addicted to venereal pleasures, was seized, at the age of 34, with stiffness in his arms, then with difficulty in moving them, and finally, after a fall whilst walking, with contraction of these members carried so far, that the hands were stiff, hooked, and so contorted that their palmar surfaces were directed upwards and backwards. The legs notwithstanding preserved their movements in

[1] Traité de Physiologie Pathologique, i. 235.

full force; the sensibility of the whole body remained intact, and frequent erections manifested themselves, so that the patient was for a long time able to have sexual intercourse, the desire for which continued active until a short time before death. After long sufferings the patient died. At the autopsy, a large quantity of serous fluid was found in the spinal arachnoid cavity, and for the extent of six or seven inches comprising the lower two-thirds of the cervical portion and the upper third of the dorsal portion; the spinal cord was so soft that the canal of the dura mater seemed really to be distended by a fluid, which fell and rose according to the angle at which the corpse was held. . . . . On opening the dura mater, this portion of the cord showed an elongated cavity filled with a grayish-red fluid, and traversed by a number of delicate bloodvessels. The cords from which the roots of corresponding spinal nerves take their origin could scarcely be distinguished in the anterior part of this disorganized portion; and on the left side the spinal cord seemed completely destroyed for an inch and a half. . . . . Examined on its anterior surface, the cord seemed less altered; and the diffluent condition of the nerve matter did not involve the external layer. . . . . This disorganization commenced abruptly below origin of fourth cervical nerves, and extended close to the fourth pair of dorsal nerves. It is worthy of remark that here a layer of medullary matter about two lines thick, and probably altered in structure, was sufficient to keep up communication between superior and inferior extremities of the cord in so perfect a manner, that not only did the legs still obey the will, but the genital organs could be powerfully excited and transmit vivid sensations of pleasure to the brain."

In recent injuries, however, so far from any such tolerance being established, a contrary state of things is generally noticed; for, although cases occasionally occur where the actual lesion fully explains the paralysis following, as in the case reported by Gross,[1] where the ball from behind entered between the last cervical and first dorsal vertebræ, penetrating and pulpefying the cord, and cutting it in two by projecting across it a fragment from the injured bones, the ball itself being found loose in the vertebral canal. Here the symptoms were, as might be expected, power of motion of arms remaining, but complete paralysis of body and legs, with loss of sensation from near the top of the sternum to the soles of the feet. The pulse was slow, and respiration heavy and laborious. The bowels were costive; and the bladder had to be relieved by catheter (life was prolonged in this case three and a half days). But it generally happens that fibres of the cord which do not suffer actual physical disorganization, lose their power of transmitting impressions, whether from compression by the effused blood, or from the shock of the injury. In the present case the ball entered the dura mater to the right of the median line, and buried itself in the right anterior and lateral column of the cord, producing but little hemorrhage into the canal of the dura mater. The amount of compression exercised upon the rest of the cord was not apparently such as to entirely occlude it, nor was there much pulpefying of the left columns of the cord, and yet from the first instant there was complete paralysis of motion and sensation in the trunk and legs, together with a marked decrease in activity of reflex actions in the part paralyzed.

Is it not possible in those cases where the system reacts, as in primary attacks of apoplexy, that the slow reappearance of power in parts at first

[1] System of Surgery, vol. ii. p. 306.

completely paralyzed, may be due to the gradual subsidence of the shock which the adjacent nervous tissue has received.

A second point of some interest in connection with this case is the explanation of the slight sensibility and power of movement which remained in the parts situated between the line of fracture, and the upper part of the sixth rib. Bearing in mind that the brachial plexus was uninjured, this absence of paralysis may be traced to three sources: "1st, the intercostal branch of the anterior division of the first dorsal nerve, nearly all of which enters into the brachial plexus; 2d, the anterior thoracic nerves, the external or superficial arising from the outer cord of the brachial plexus (formed from fifth and seventh cervical), and distributed to the under surface of the pectoralis major, while the internal or deep branch arises from the inner cord of the brachial plexus (formed from the eighth cervical and first dorsal nerves), and is also distributed to under surface of pectoralis major and minor muscles; and 3d, the middle or clavicular branch of the cervical plexus (from the third and fourth cervical nerves), which crosses the clavicle and supplies integument over pectoral and deltoid muscles, communicating with cutaneous branches of upper intercostal nerves.

From the point at which the ball struck the left side of the body of the vertebra, it is not probable that any filaments of the left sympathetic were cut, so that the character of the heart sounds, the paralysis of the stomach as shown by the undigested fragments of meat, the paralysis of the bladder and of the rectum afford a complete demonstration of the important motor action of the spinal filaments of the sympathetic nerve.

As regards the prolongation of life after injuries of the spinal cord, perhaps the most important question is as to the implication of the phrenic nerves. Where the nerves are completely paralyzed, or in other words, when the compression or laceration is seated at or above the third cervical nerve, life is not prolonged much beyond twenty-four hours. But when these nerves are not involved in the injury, life may be prolonged to a much greater extent; so that perhaps the average duration of life after injuries involving the entire cord just below the origin of the brachial plexus, may be stated as from eighteen to twenty-four days. In the present case, the inability of the patient to receive stimulants, the free hemorrhage from the thyroid gland, the great œdema of the pharynx and adjacent parts, afford a full explanation of his death in so short a period as twenty-four hours.

Nov. 14th. Medullary Cancer.—Dr. S. W. Mitchell, on behalf of Dr. PEALE, of Holmesburg, Pa., presented the specimen, and read the following notes of the case from which it was derived.

Mrs. McDaniels, æt. 47, first felt a soreness at the junction of upper with middle third of the rectus femoris muscle of each thigh. This soreness soon got well on the right leg, but on the left continued, and gradually became a small lump (as she described it), forming a tumour the size of the fist by the expiration of about three months, which was August 20, 1864, at which time she was obliged to remain in bed, owing to the pain in the limb, and she has continued there up to this date, Feb. 2, 1865. The tumour is now situated over most of the upper and middle thirds of the anterior portion of the thigh, covering a space as nearly as can be estimated by external examination, of about 9 inches long, beginning $1\frac{1}{2}$ inch below Poupart's ligament, and apparently about 5 inches wide, and projecting from the bone $3\frac{1}{2}$ inches.

There is an obscure sensation of fluctuation over a surface about $3\frac{1}{2}$

inches by 4 inches at the apex of the mass. The skin has a dark-red appearance over a space 1½ inch in diameter near the centre of the mass.

Enlarged vessels traverse the entire length of the tumour before palpation. No pulsation could be discovered at any point, but auscultation discovered a slight but decided *bruit de soufflet* over central part.

On Jan. 18th, I punctured the mass with a bistoury, and explored the cavity with a probe. The cavity appeared to be the size of a small orange, and filled with fluid. The fluid which escaped through the puncture was very thin and bright red, much like poor arterial blood. It came in a continuous stream. In the cavity there were projections, apparently either cartilaginous or fibrous. Pains in the tumour were paroxysmal, very intense, but not frequent, described as an aching soreness. Mrs. McDaniels had been a well-developed, strong, hard-working woman. Her left leg, however, was shortened by what appeared to have been morbus coxarius occurring in childhood. For many months previous to her present sickness she had nursed her mother, a paralytic, and very heavy woman, requiring a great deal of lifting, which she had done alone. I inferred from this circumstance, and from the height of the bed on which her mother had lain, that the edge of the bedstead rail, against which she had braced her thighs, had caused the bruised places on them. From the time she first felt the soreness for about four months she was attended by a homœopath, and for a few months by a horse doctor, who promised to cure her by poulticing the tumour with flaxseed meal.

After this, on the 17th of January, she sent for me. I found the tumour as described above.

Her general health was very poor; she had diarrhœa, night-sweats, and cough; was scarcely able to bear lifting out of bed to the chair.

Under careful treatment, diarrhœa, night-sweats, and cough ceased, and strength improved. She continued better for about two months; after which she became dropsical from her feet to her chin, and died May 10th, with entire inability to swallow either solid or liquid food, in consequence of the pressure of the effusion upon œsophagus.

The *post-mortem* examination of the tumour showed the cavity to be filled with a clear amber-coloured fluid of the consistence of coal oil. The extremities of the mass were cartilaginous and osseous, and continuous with the rectus femoris muscle. The vastus externus and internus curved around the mass, evidently having been pushed aside by it while growing. The periosteum of the femur beneath the tumour was intact, but there were four or five small round prominences beneath, of the size of pin heads, covering a space about three-quarters of an inch in diameter. The femoral artery and vein were pushed aside, and lay beneath the tumour, nearly under the centre of the cavity. The course of the profunda artery could not be traced, it being so matted with the other structures, but I thought it supplied the tumour with its nourishment.

Nov. 22d. Report of Examination of Tumour.—By Dr. WM. PEPPER.

In presenting to the Society this report upon the tumour referred to me at the last meeting, I think it but fair to say that, excepting as regards its general characters and the general considerations springing from them, it is not worthy of being held to be conclusive. The changes produced in the relative consistence, in the colour, in the amount of granular débris, in the size of the cells and the appearance of their contents, are so great and so uncertain that, so far as the microscopic examination is concerned, I offer the results with great diffidence.

The tumour which, as you remember, was seated on the anterior surface of the left thigh, measures in the circumference of its longitudinal diameter 16½ inches, and in its circumference transversely 14½ inches; its weight after prolonged maceration is 2 lbs. 4 oz. (Avoir.). It is essentially composed of two parts, a capsule, and a number of lobules of varying size and consistency. In the base of the tumour, running in the direction of its long diameter, is a layer of muscular tissue, the fibres of which are granular, broken, and fatty; there is also an excess of fibrous tissue, and considerable interstitial fatty degeneration. The capsule, which seems to rise from the layers of fascia and sheaths of the muscles, is very firm, and in places fully one-third of an inch in thickness; and along the base there are numerous points of ossification imbedded in its walls. Its structure is not homogeneous, but shreddy; the white fibrous bands leaving fine areolæ which appear filled with a more grayish matter. Under microscope, it consists of interlacing bands of fibrous tissue, with oil globules scattered through them, and especially in neighbourhood of the nodules of bone, inclosing numbers of cells; aggregated in small collections, small, mostly singly nucleated. The tumour which it incloses is lobulated, the lobes varying in size from a cherry to one which composes almost half the entire mass. They are connected with each other by delicate layers of areolar tissue, and have their shape modified by natural pressure. They vary much also in consistence; the hardest cutting almost like cartilage, and presenting a smooth, firm, and slightly granular section, whereas the softest are very doughy, and their structure loose and broken, like a soft steatoma. Under microscope the softer portions contained little else than the granular débris of cells mixed with a great proportion of oil globules and granular fat. Other portions, rather more consistent, contained some fibrous structure, altered cells and nuclei, much fat and granular débris; and it was only in the hardest lobules that it was possible to obtain a section at all capable of demonstrating the structure. A section of one of these showed a moderate amount of fibrous tissue, rarely forming distinct areolæ, with cells and free nuclei clustered together in a delicate blastema. The cells varied much in size; none of them, however, being notably large; and in the number of their nuclei, some containing a single one; others, three, four, or even more; the nuclei as a rule were large in proportion to the containing cell. Many of the cells were quite delicate, and generally both cell and nucleus were rendered more transparent by action of acetic acid. There was a quantity of oil in these portions also, although very much less than in the softer lobules.

The method which proved most successful for displaying these elements was to soak the section in water; treat it with acetic acid; then with ether; and, subsequently, add solution of aniline red to render the nuclei more distinct.

Lithotomy.—Dr. JOHN ASHHURST, Jr., M. D., read the following paper: Charles Hinkle, a boy of five years of age, was brought to the Episcopal Hospital on May 5th, 1865, suffering from the usual symptoms of vesical calculus. He was exceedingly thin, weak, and harassed by a severe attack of whooping-cough, which, however, it was stated by those who brought him had already begun to decline. He suffered besides from aggravated prolapse of the rectum, the bowel coming down not only when he went to stool, but during each paroxysm of coughing.

The introduction of a sound revealed the presence of a calculus of con-

siderable size, and which from the account given by his friends must have been several years in forming.

An examination of his urine, which was entirely free from blood and pus, showed the presence of oxalate of lime in large quantity.

It was evident that the child was gradually sinking under the complicated evils of his condition, and it was therefore decided in consultation not to postpone operative interference with any expectation of amelioration in his physical condition, which was however confessedly far from satisfactory.

Accordingly on May 10th, the patient being thoroughly etherized and secured by bandages in the usual position, his bladder having been injected with a few ounces of tepid water, I performed the ordinary lateral operation, the staff being held firmly against the pubic arch by my colleague Dr. Forbes.

The knife employed was a common scalpel of small size, which sufficed for all the steps of the operation, the wound being then dilated with the finger so as to permit the introduction of the forceps. The stone was thus extracted without any difficulty, and was found to weigh 159 grains, a minute portion having been chipped off by the forceps, rendering the approximate weight of the whole about $2\frac{3}{4}$ drachms.

Not more than a tablespoonful of blood was lost during the operation, and the patient was therefore at once placed in bed, the bladder being merely washed out with a syringeful of warm water.

The patient did very well after the operation for about two weeks, when an abscess formed immediately beneath and communicating with the umbilicus, opening spontaneously, and discharging pus mingled with a fluid of a decidedly urinous odour. In spite of this, however, the patient rapidly improved under good diet, careful nursing, and the administration of nitro-muriatic acid (the perineal wound healing firmly though slowly), and at the time of his leaving the hospital, he was very much better in every respect than before the operation, and complained only of slight cough, and occasional tenderness of the skin around the umbilicus.

He was discharged September 22d, 1865, having been in the hospital 140 days.

Nothing further was heard from this patient until October 28th, 1865, when the person who had charge of him came to the hospital stating that he had died that morning about 3 A. M., and requesting the resident surgeon to furnish a certificate. This of course could not be done without an autopsy, which was accordingly made the next day by Drs. Bodine and Watson, resident surgeons to the hospital, who have furnished the notes of the examination.

Autopsy twenty-nine hours after death.—Rigor mortis very well marked. The cadaver greatly emaciated. Decomposition had already begun. The head was not examined. In the thorax old pleuritic adhesions were found on both sides, and both lungs contained numerous tuberculous deposits, which had advanced to the stage of softening in the lower part of the upper lobe of the left lung. The heart appeared healthy. The abdomen presented some peritoneal adhesions around the umbilicus, and the urachus, which was patulous, communicated with the sub-umbilical abscess. The bladder was much contracted and thickened, and its lining coat roughened and darkly congested. The wound of lithotomy seemed to have reopened at one point.

Death apparently resulted from the tuberculous disease, which probably

had remained latent from the date of an attack of sickness which he had experienced when between one and two years old, until excited to fatal activity by the debility produced by the combination of whooping-cough, and the irritation due to the presence of calculus.

I have subjoined a table of five cases of vesical calculus, being as far as can be ascertained, the entire number treated in the Episcopal Hospital up to this time.

A Tabular View of Five Cases of Vesical Calculus Treated in the Episcopal Hospital.

No.	Name.	Age	Sex.	Nativity.	Conjugal state.	Occupation.	Date of entrance.
1	Samuel Patton	6	Male	U. S.	Single	.....	Nov. 6, 1860
2	Henry P. O'Brien	11	"	"	"	Schoolboy	May 31, 1864
3	John Donaldson	70	"	Ireland	Married	Weaver	July 8, 1864
4	Charles Hinkle	6	"	U. S.	Single	.....	May 5, 1865
5	Mary Hayes	10	Female	"	"	.....	May 17, 1865

No.	Name.	Result.	Date of discharge.	Days in hospital.	Nature of operation.	Remarks.
1	Samuel Patton	Recovery	Jan. 12, 1861	67	Lateral lithotomy	
2	Henry P. O'Brien	Death	June 21, 1864	21	" "	Died from erysipelas.
3	John Donaldson	Death	July 20, 1864	12	" "	
4	Charles Hinkle	Recovery	Sept. 22, 1865	140	" "	Died in 25 weeks from phthisis.
5	Mary Hayes	Recovery	Oct. 16, 1865	152	Rapid urethral dilatation.	

Polypi of the Vocal Chords.—Dr. S. W. Mitchell exhibited the specimen for Dr. CHARLES M. ELLIS, and read the following history of the case from which it was derived :—

On the 29th of October a mulatto child, three years of age, suffering with great difficulty of breathing, was brought to me. The following history was elicited from its mother :—

In February last the child's voice became hoarse, the hoarseness gradually increasing until the voice was entirely lost. A troublesome cough began at the same time. No attention was paid to these symptoms, as the child continued in excellent health ; in fact, it was never in as good health as during the summer. Early in September occasional paroxysms of dyspnœa supervened, and so rapidly increased in frequency that, by the last of the month, there was no intermission of the violent efforts of the child to perform the act of respiration. The dyspnœa was temporarily much relieved by the expulsion of "a piece of flesh stained with blood," after a severe fit of coughing. Notwithstanding this continued embarrassment of the respiratory function, the child's general health did not materially depreciate. During this month it was placed under the care of an "Indian doctor."

When I first saw the child its respirations were above 40 per minute, and every muscle was taxed to its utmost in expanding the cavity of the chest. The sternum was forced out an inch and a half above the level of the chest, but was readily reduced to its natural position and retained there by pressure of the hand, without increasing the child's sufferings. Every respiration was attended by a shrill croupal sound. The pulse was almost natural in frequency, volume, and force. There was not, nor had there been at any time, difficulty in swallowing.

It was evident that the difficulty of respiration was produced by the existence of an obstruction in the larynx, but the most careful inquiry did not disclose any history of the introduction of a foreign substance into the windpipe. The nature of the child's sufferings was explained to the parents, who finally acquiesced to my proposition to open the windpipe. The child, in the meantime, failed very rapidly, and died on the sixth of November, a moment after it was placed on the table preparatory to the operation for opening the larynx and trachea. On examination the laryngeal passage was discovered to be constricted to a remarkable degree by the pressure of a polypus projecting from each vocal chord.

The neck of the growth of each side is of equal length laterally with the chord. They extend downwards about half an inch. In the fresh condition a knitting-needle cannot be passed by them into the trachea without displacing the growths. There was no injection or tumefaction of the lining membrane of the larynx or trachea.

The mother, at the child's birth, was suffering from secondary syphilitic symptoms, and the child in its first year had external evidences of an inherited taint.[1]

Dec. 13. *Suppurative Meningitis following a Blow upon the Nose, which produced a Comminuted Fracture of the Nasal Bones, the Turbinated Bones, and the Vomer.*—Dr. WM. PEPPER exhibited the specimen, and read the following history of the case from which it was derived.—

William B. Scaife, a British seaman, but by birth a Norwegian, æt. 40 years, was admitted to surgical ward of Pennsylvania Hospital, Dec. 1, 1865, at 2 P. M. The day previously, in the afternoon, he was struck across the face, on a line with the bridge of the nose, by the boom of a vessel. There had been considerable epistaxis before admission, and the nostrils were filled with a hard dry clot. There was marked ecchymosis and tumefaction of the soft parts about eyes and nose, and it was easy to produce crepitation in the nasal bones. There was, however, neither ocular ecchymosis nor any discharge from the ears. Soon after admission, his face was dressed with lead-water and laudanum, and he was put to bed—although he seemed as well as usual, and complained of no particular pain or uneasiness. He kept quietly in bed through the afternoon, and no symptom attracted any attention, until about 7 P. M., when he complained of nausea and soon vomited the supper he had eaten shortly before. After vomiting he complained of intense headache (in the back of the head especially, according to the statement of the patient who lay next to him), and within thirty minutes from first complaint of nausea, he was seized with a slight but general convulsion. Immediately after this, he presented the following symptoms: Complete unconsciousness—it being impossible to attract his attention or to gain any sign of recognition; general spasmodic movements of all the extremities, with strong tendency to contraction of hands and feet; an aspect of wild delirium, with frequent efforts to get out of bed; complete loss of power of co-ordinating muscular movements, so that if he gained his feet, he would instantly fall; and frequent piercing shrill cries. The face was flushed, the pupils moderately contracted and not entirely insensible. The lower part of the face was much distorted, the mouth being drawn into a marked "sardonic grin." The surface was hot and dry. The pulse was about 110 per minute, quite hard and full: the respirations were

[1] See Report of Committee, read Jan. 10, 1866, in reference to the influence of syphilis in causing morbid growths of larynx.

irregular, shallow, and frequent. Reflex movements could be aroused in all parts, though less actively than normal.

There was no suspicion of the patient being an epileptic, and the breath was entirely free from alcoholic odour.

The patient was strapped down in bed, ice-water applied to his head, a large blister put on at back of his neck, and a turpentine enema administered.

At 9 P. M., the unconsciousness and spasmodic movements continuing, although his cries were much less frequent, he was bled to about f℥xxij from the right arm—the cloths wrung out in ice-water were kept up through the night.

The blood, which was drawn quickly, formed a large clot, quite firm, without marked buffy coat.

The following morning the symptoms had changed considerably; there were still spasmodic movements of the extremities, with carpo-pedal contractions, and the *risus sardonicus* persisted; but the face was livid, the pupils dilated and insensible, the left eyeball rolled inwards and upwards, the extremities cold, and reflex movements very feeble. The pulse was weak and frequent, though not small, and the respirations frequent and laboured. Urine voided involuntarily.

No further treatment was adopted, deglutition being impossible and the rectum no longer being retentive. The symptoms remained much the same through the day, and death occurred at 9 P. M., about fifty-two hours from reception of the injury, and but fourteen hours from development of the first symptom of cerebral lesion.

Post-mortem twelve hours after death.—Head alone examined. There was no wound externally communicating with fracture of nasal bones, but upon dissecting off the soft parts the fracture was found to involve all the small bones of the nose, the nasal border of the superior maxillary bone on either side, the upper turbinated bones, and the vomer—the comminution of these latter bones extending up to the cribriform plate of the ethmoid bone. Upon removing the calvaria, the dura mater and external layer of arachnoid were intensely congested; the inner layer of arachnoid was opaque, and over the entire convexity of the brain was spread a layer of thick creamy pus, occupying the subarachnoid space. This was especially marked over anterior and middle lobes of brain, but extended round the fissure of Sylvius on each side (but more so on the left), and reached posteriorly over the posterior lobes, and, to a much less extent, over posterior surface of cerebellum and medulla oblongata. There were about f℥ij turbid serum effused around base. The ventricles did not contain any abnormal amount of fluid.

Dec. 27. *Abscess of the Spleen.*—Dr. GEORGE PEPPER exhibited the specimen, and stated that the case had occurred in the practice of Drs. Fricke and Levick, who kindly allowed it to be presented to the Society.

The patient was a German of about 45 years of age, stout and well formed, and in the enjoyment of excellent health until his last illness; he was accustomed to consume a considerable quantity of lager beer daily, but was not of intemperate habits. About two months previous to his death he visited the country, but was soon obliged to return to his home on account of a general feeling of malaise accompanied with more or less constant chilliness. He then experienced for the first time a severe pain, of apparently rheumatic character, in the right knee, accompanied by considerable heat and swelling of that joint. For this he was treated by his wife with

some purgative nostrum during thirteen days, being violently purged and puked by the remedy. At this stage of the disease Dr. Fricke first saw him; there was still considerable pain in the joint, but the swelling and redness had disappeared. He was put upon the use of the iodide of potassium and morphia, and as he was much prostrated, stimuli and a nutritious diet. Under this treatment the pain disappeared, but the case became complicated by the appearance of decided chills, quotidian in type; although no miasmatic origin could be detected, sulphate of quinia was ordered in antiperiodic doses, combined with opium and blue mass. This had no controlling effect whatever. His condition becoming more and more dangerous, Dr. Levick was called in. The patient presented no lesion, so far as could be determined, of the respiratory, circulatory, or digestive systems; the limits of the liver, as marked out by percussion, were rather increased; the patient complained of a dull pain felt in the left hypochondrium, but percussion revealed no increase in the bulk of the spleen; he could lie at pleasure on either side, and pressure seemed to aggravate it but very slightly. The chills assumed the double quotidian type, and the quinia was increased to gr. xx, xxx, and xl on three successive days, combined with tinct. ferri chlor.; stimuli and nutritious diet. The chills were very violent in character, and followed by profuse and exhausting sweats. Towards the close of his illness his intelligence, which had hitherto remained perfect, became impaired, and this condition gradually deepened until two or three days before death there was almost complete coma. The surface of the body also became covered with petechia and vibices, and death took place quietly.

Post-mortem examination, at which I was kindly invited to assist, revealed the following:—

The body large, well formed, and fat; the cadaveric rigidity marked; petechia much faded.

Brain pale; substance normal, with the exception of the left middle lobe of the cerebrum, which was much softened; no effusion; meninges healthy.

Heart pale yellowish colour; much loaded with fat; texture friable; right side dilated; valves normal.

Lungs pale, crepitant throughout, a few calcareous nodules in posterior part of the right lung, it being also bound down by a few old adhesions.

Liver rather soft, of a grayish-yellow colour, with a faint greenish tinge; the microscopic characters were those of advanced fatty degeneration, with a slight increase of the fibrous structure.

The gall-bladder contained about fʒiss of healthy looking bile.

Kidneys pale, soft, cortical substance rather diminished, the secreting cells were diminished in number and contained granular fat.

Spleen slightly enlarged, splenic pulp of rather soft consistence and of a reddish-brown colour. On the left inferior extremity of the organ, immediately beneath the capsule, was found an excavation containing about fʒss of fluid of a reddish-brown colour, resembling ichorous matter; the walls of this cavity were about two lines in thickness, of firmer consistence than the remainder of the organ, and of a yellow colour, resembling concrete pus or cheesy tubercle.

The *microscopic characters* of the walls were shrivelled granular cells, cells with single nuclei, fat granules and globules. The fluid in the cavity consisted of shrivelled granular cells, cells with single nuclei, blood cor-

puscles, fibres apparently the broken-down trabecula of the spleen, fibrous cells, a few masses of angular opaque reddish-black pigment, fibrinous flakes.

Splenic pulp of normal character. Blood, dark and fluid.

Dr. BRINTON stated that in military practice he had met with many cases of metastatic abscesses of the spleen, liver, and lungs, occurring after inflammation of the knee-joint, the result of gunshot injuries; and also after gunshot injuries of the bones, especially of the femur; and after osteomyelitis following amputation. He used the expression "metastatic abscesses," although he doubted whether the term abscess was at all times strictly applicable to the lesions in question. In many of these instances of metastatic deposit he had been enabled to make careful dissections of the parts involved, and as far as his experience went, it was rare to find that these so-called abscesses in reality contained pus. The external appearances of the diseased parts were those indicative of purulent deposit, but microscopically examined, the contents of the cavities proved to be a disintegrated and disorganized mass, consisting of oil globules and shrivelled granular cells and fibres. In the great majority of cases no pus cells or globules could be discovered, and the deposits appeared to present gangrenous rather than purulent characteristics.

Dr. Brinton stated that in most of the secondary or metastatic deposits in the lungs which he had examined, thrombi were present in the larger veins and particularly in the femoral and iliac veins. In these cases the deposits in the lungs were of a cheesy consistence, and were devoid of pus corpuscles. Dr. Brinton also remarked that he had not in any instance succeeded in convincing himself of the existence of the detached masses of emboli alluded to by Professor Virchow in his lectures on Thrombus. In metastatic deposits in the lungs of the most circumscribed character, and in every stage of development, he had again and again sought for the small clots in the vessels described by Virchow, but he had never succeeded in detecting them. While he was far from denying that such clots might be detached from a larger and central clot, and might be carried by the circulation to a remote organ, and there lodge, and thus act as a predisposing cause of metastatic deposit, he could only say that the most careful dissection on his part had failed to reveal this fact in any of the many specimens of secondary deposits which had come under his notice.

Dr. Hutchinson remarked that he had seen such a condition of the spleen as in the specimen presented by Dr. George Pepper, associated with some form of disease of the heart and dependent upon an embolus which had lodged in one of the branches of the splenic artery. In this case he understood the arteries had not been examined, but the heart was found to contain an old clot. The matter contained in these so-called abscesses did not ordinarily present the microscopic appearances of pus.

REVIEWS.

ART. XVII.—*Hypodermic Injections in the Treatment of Disease.*

1. *Hypodermic Injections in the Treatment of Neuralgia, Rheumatism, Gout, and other Diseases.* By ANTOINE RUPPANER, M. D., Fellow of the Massachusetts Medical Society. pp. 160. Boston, 1865.
2. *On the Speedy Relief of Pain and other Nervous Affections, by means of the Hypodermic Method.* By CHARLES HUNTER, Surgeon to the Royal Pimlico Dispensary, etc. etc. pp. 64. London: John Churchill & Sons, 1865.
3. *Die Hypodermatischen Injectionen nach clinischen Erfahrungen,* von Dr. E. LORENT in Bremen. pp. 48. Leipzig, 1865.
   Clinical Experience with Hypodermic Injections, by Dr. E. LORENT, of Bremen.
4. *Die Hypodermatische Injection der Arzneimittel. Nach physiologischen Versuchen und klinischen Erfahrungen bearbeitet,* von Dr. ALBERT EULENBERG, Privat-Docent und Assistant Arzt der chirurgischen Universitäts-Klinik in Greifswald. Eine von der Hufelandischen medicinisch-chirurgischen Gesellschaft gekrönte Preisschrift. Mit einer lithographirten Tafel. pp. 218. Berlin, 1865.
   The Hypodermic Injection of Medicines, treated according to Physiological Experiments and Clinical Experience, by Dr. ALBERT EULENBERG, Private Teacher and Assistant Physician of the Surgical Clinic of the University of Greifswald. A Prize Essay of the Hufeland Medico-Chirurgical Society.

THERE can be no question that the administration of medicines by injection into the subcutaneous cellular tissue is a most important addition to our therapeutic resources. Avoiding the pain which attends the endermic method, and securing a more direct entrance to the economy than the digestive organs afford, it insures certainty of effect to our remedies, and so obviates in an important particular one of the uncertainties of our art. As a means of relieving pain it rivals even the inhalation chloroform in certainty and rapidity of action, surpasses it in permanence of effect, while it is free from any objections which might be made in regard to danger.

The brief space of time within which it has established itself in the profession is a proof of its value, as it is, too, a complete refutation of the oft-repeated slander, generally made by the adherents of some form of quackery which has not succeeded in establishing any merit, that we are slow to adopt improvements in our profession, and indeed, set ourselves obstinately against progress. First used by Dr. Wood, of Edinburgh, and made known by him in 1855, it was largely tested, and the results published in 1859, by Dr. Hunter, of London, while Behier, Courty, and Follin, of France, and Oppolzer and Scanzoni, of Germany, are chief among those who in that and the succeeding year spread intelligence of its merits. In

this country Dr. Ruppaner was the first writer upon the subject (May, 1860), until now we believe the knowledge of it is very general and the practice rapidly extending among us, while its value is nowhere denied, certainly by no one who has given it a fair trial.

The works whose titles stand at the head of this article are among the few which have yet been published upon the subject. That of Dr. Ruppaner was, we believe, the first to appear in our language, certainly the only one which has appeared in this country, and therefore of additional interest. It is a condensed but well-written treatise, presenting a sketch of the history of the introduction of hypodermic medication, describing the necessary instrument and the operation, indicating the class of cases to which it is adapted, and the remedies best administered in this way; containing everything in fact necessary to instruct and guide a practical physician in the matter. It is especially marked by, and valuable for, its detail of cases treated by the author himself, of which he gives sixty at greater or less length.

Dr. Hunter's work is mostly made up of an assemblage of papers written by him for medical societies or journals. It therefore lacks that methodical arrangement and finish which belong to a treatise. While it contains much of value, and being the production of an early labourer in this field of research, cannot fail to be of great interest, it is marred, we think, by a tone of injured *amour propre*, arising from a contention with Dr. Wood, of Edinburgh, as to priority in use of hypodermic injections for general diseases and the necessity of localizing the injection in cases where they are used for relief of pain. Much space of his little work is thus occupied which we cannot but think would have been better filled with details and examples from the large amount of experience he has undoubtedly had with this method of treatment.

The work of Dr. Lorent is a brief and modest contribution to the subject, and, as its title indicates, essentially clinical in character. Evidently a practical man, and a man of practice, he has investigated the subject to discover what aid he could derive from it in his daily encounters with disease. His experience seems to have been large, numerous cases are given in detail, and his relation of them bears the impress of truthfulness as does his whole work, and exhibits as well moderation of expression and unbiassed judgment.

Dr. Eulenberg's prize essay is a work of wider scope and higher aim. It may be said to cover the whole ground in every particular up to the time it was published, an appendix being added while it was in press. With true German comprehensiveness and minuteness of detail, it aims at exhausting the subject. Had Tubal Cain, "the first worker in brass and iron," ever made an instrument for hypodermic injection, we should undoubtedly find a description of it here. Its bibliography includes every work published upon the subject, and every magazine article, not excepting those of our own country, as we find mentioned the *American Journal of the Medical Sciences*, the *Transactions of the American Medical Association*, and Prof. Goldsmith's name, in connection with the injection of bromine. It gives in detail all that is known of the action of every medicine thus administered, of the rarer alkaloids as nicotin, ergotin, conia, and woorara, and hydrocyanic acid; every disease thus treated, or proposed to be treated, comes under notice, even to stuttering, prolapsus of the rectum, and extra-uterine pregnancy! Further, in his chapter on "the forensic relations of subcutaneous injections," the author writes in view of a future, which may we never see! when there will be hypodermic

Palmers, and Pritchards, and Martha Grinders! But it must not be supposed that the work is a mere compilation of other men's observations and opinions; the author has worked faithfully in person upon his subject, and the "physiological experiments and clinical experience" of the title-page are found throughout the work; he has studied the subject both theoretically and practically, and his work contains his own observations faithfully detailed, and his conclusions clearly stated, as well as the results obtained by other labourers in the field.

We proceed first to inquire, what are the inconveniences or dangers attending this mode of medication, and how are they to be avoided? It is limited, certainly, in the range of its applicability; limited by the form and dose of the medicine, and perhaps adapted to the treatment of but a small number of diseases; facts which do not conflict with the high praise bestowed upon it. The pain attending the puncture with the syringe is insignificant, yet dread of even so small an amount of "cold steel" may prevent its use in some very nervous persons. No local after-effect of any consequence has been anywhere recorded; and the one objection of note arises from the much smaller quantity of a medicine necessary to produce an effect when used in this manner than when introduced into the stomach. So far as the preparations of opium are concerned, this objection is easily met; care and accuracy in regulating the dose obviate all danger from this source, in other words, it needs but to be known to be avoided. We have heard several rumors of severe symptoms and even sudden death having followed subcutaneous injection of morphia, the presumption being that a vein had been punctured and the medicinal solution poured directly into the current of the circulation. Introduced in this way, far more violent effects result than when it is simply deposited in the cellular tissue. The only well-authenticated case of alarming symptoms produced in this way is that of Prof. Nussbaum, of Munich, which has been generally copied into the medical journals.[1] To this we may say, first, it was the only instance out of a great number of injections; "he had injected morphia under his own skin more than two thousand times!" So Graefe says he has injected the temporal region "hundreds of times," Dr. Wood made over one hundred injections in one patient, and Eulenberg has made sometimes forty or fifty, and in one case four hundred, without meeting with a single instance of unpleasant result. Second, the dose was very large for the mode of administration, two grains of acetate of morphia, an amount which could only be reached by long-continued use of the medicine. It may be well to mention here the mode of avoiding danger proposed by Prof. Nussbaum *apropos* of this case; it is, to inject *very slowly;* the violent effects being almost immediate in their appearance the injection can be stopped in time to prevent danger. We suggest also the withdrawal of the point of the syringe for a short distance before pushing down the piston; the elasticity of the tissues, it seems to us, would close any puncture of a vein which might have been made, and thus prevent ingress of the injected fluid.

We copy from Dr. Lorent's work the only other instance of severe symptoms produced by morphia, and in reference to this case call attention again to the *dose*, which was far above the maximum quantity generally administered hypodermically:—

"We have seen deep narcotism follow the injection of morphia but once.

[1] Am. Journ. Med. Sciences, January, 1866, p. 240, from Med. Times and Gaz.

The patient was a delicately-formed male, forty-three years of age, suffering from delirium tremens; one grain of morphia was administered. The pupils were so contracted as to appear entirely closed, perfect anæsthesia to pricking with a needle existed in the skin, the pulse was very slow, respiration sank even to six in the minute, so that, fearing a fatal termination, artificial respiration was maintained. The threatening symptoms, however, soon subsided, and from the favourable termination of the delirium tremens, which soon followed, the large dose seemed to have exerted a good influence." (p. 11.)

It would seem, however, that all the alkaloids are not so reliable as to the relation of effect to dose when used subcutaneously as morphia. Atropia is indicated particularly by Dr. Lorent as a medicine requiring great care in its use with the first injections, and especially with females. He relates a striking case where only $\frac{1}{100}$ of a grain produced very serious symptoms, and two others in which unpleasant effects followed the injection of a quantity below the ordinary dose. Dr. Eulenberg gives a similar case which will be detailed farther on.

Is the effect of medicines thus introduced into the system identical with that following ingestion? With the exception of Dr. Hunter, the authors whose works are before us answer this question in the affirmative, or believe in a far less degree of modification of their action; it is in their effect upon general diseases, or upon diseases of the nervous centres, rather than as used merely for the relief of pain, that he believes them to differ most widely in their action from the usual standard. Thus he says (p. 15):—

"In cerebral affections medicines called anodynes frequently act so far more effectually, and so differently from the stomachic doses of the same, as almost to warrant us in considering them as different medicines."

He maintains that morphia used subcutaneously has a sedative influence upon the circulation not produced by it when absorbed from the stomach:—

"The action of the heart is diminished in proportion to the dose injected. Thus, in mania, I have reduced it from 120 to 80 in four minutes." * * * *
"This first and lowering effect produced upon the circulation is a point of practical importance in the treatment of inflammation." (p. 33.)

Atropia, according to him, does not have a similar effect upon the circulation, but he claims to have discovered new or different powers for this alkaloid than those usually accorded to it:—

"Let me first dispel the idea that atropine is a cerebral narcotic. I do not consider it as such. Atropine is rather a stimulant at the onset than a sedative. Its first effects upon the heart, lungs, and general circulation are not those that at all predispose to sleep, as I have shown those of morphia do. But it is occasionally a narcotic, and the sleep is, I believe, brought about indirectly. The *sensations* seem first to be benumbed, pain to be relieved, and sleep follows. The sleep of atropine begins with the eyes open, but the vision asleep, with a few vague movements of the hands; the respiration deep and regular, but not stertorous, and the pulse will continue twenty beats or so in the minute higher than usual." (p. 35.)

The action of medicines is, however, undoubtedly modified in some degree by subcutaneous injection. Thus Dr. Hunter speaks very strongly, far more so than we are yet prepared to do, as to constipation not following opiates thus introduced:—

"Given by the cellular tissue neither morphia nor opium ever constipates. I have used the morphia injection for weeks together, in cases of chronic disease, the bowels acting daily—but never acting without medicine in the same patients, if the morphia was given by the mouth." (p. 18.)

The unpleasant symptoms produced by opiates are not however escaped by administering them subcutaneously. It is, perhaps, expecting too much to anticipate that we shall ever find a means of avoiding the nausea and sickness which follow the introduction into the system of opium and its preparations in some subjects, and which deny their blessings and benefits to so many. Certain it is, as we speedily found by experience, these unpleasant symptoms do follow the administration of narcotics in this way, and all these authors state the fact, although the testimony inclines to the view that the evil effects are lessened in degree, perhaps sometimes entirely escaped. Dr. Ruppaner claims to avoid them by using only a minimum dose—finding a "point of tolerance" of the narcotic beyond which he does not pass. (p. 154.) Dr. Hunter places the frequency of occurrence of these unpleasant symptoms lower than any of the other writers; still he admits that they do occur, and sometimes even prevent the use of these medicines hypodermically as well as otherwise, although in a glowing comparison he makes in one place (p. 15) between the condition of the patient after the hypodermic administration of morphia and after its ingestion, he entirely ignores them.

Medicines injected subcutaneously have a double action—a local and a general effect; they influence the nerves of the part injected, and by the circulation the nervous centres. Which of these is the most important, and does the former depend entirely upon the latter? It will have been already gathered from our remarks that there is a difference of opinion upon this question. All the authorities answer it affirmatively except Dr. Hunter; he alone maintains, and with more warmth we think than the occasion demands, that localization of the injection for a local disease, as neuralgia, is not necessary, and these are his reasons:—

Equal benefit follows the distinct injection—therefore localization is not necessary.

There are certain objections to localization: 1, the infliction of unnecessary pain; 2, the almost certain risk of irritating, thickening, or inducing matter in the part by repletion; 3, many cases of neuralgia would be excluded from treatment were localization necessary.

Commencing with the objections, we feel bound to answer to the first that injecting in the *same identical spot* is not a necessary part of the doctrine of localization, and therefore *more* pain is not occasioned; the answer to the second is already given in our statement, from authorities, of the insignificant local effects produced by the injections even when many times repeated; to the third, and to the proposition laid down that equal benefit follows the injection whether made near to or at a distance from the affected point, we say that by increasing the range of applicability of hypodermic medication benefit is conferred upon the profession and upon humanity, and the author of it deserves credit for the discovery. To Dr. Hunter belongs undoubtedly a share of the credit, possibly the major portion of it, yet we hesitate to decide a question of this kind about which a journal controversy has been carried on for some months between him and Dr. Wood, of Edinburgh; certainly it would not be fair to do so without examining both sides. Dr. Hunter undoubtedly deserves credit for his efforts in extending the practice of hypodermic medication to general diseases, and to diseases of the nervous centres, as mania and delirium tremens, and to this end his doctrine of the non-necessity of choosing the point to inject must have tended.

But we must examine other witnesses in regard to this doctrine that the

locality of the injection has no influence in the cure even of such a disease as neuralgia. As we have said, there is great unanimity in favour of the opposite view, Ruppaner considers the question (pp. 36–44), gives his own experience, and quotes Béhier; their pathological experience is strongly confirmatory of their views. Dr. Lorent writes to the same effect. So does Dr. Eulenberg, whom we rather quote because his work is not as accessible as the one in our own language, and because his testimony is given without reference to any controversy or disputed claims whatever, all of this having occurred since he wrote; he simply investigates the question as a scientific problem. He states that in a case of double rheumatic sciatica observed by him, complete relief of pain for a space of from two to three days followed each injection *upon the side upon which the injection was made*, while upon the other side the pain immediately returned upon the subsidence of the effect of the narcotic upon the nervous centres.

But not content with this proof this author instituted a series of experiments by means of a comparison of the sense of touch, as measured by Weber's instrument, applied to corresponding points of the surface upon the two sides of the body. These experiments are recorded and tables of the readings given in his work (pp. 42–51). They show unmistakably that the general view is the correct one. We have only space for his conclusions:—

"After the subcutaneous administration of various narcotics (morphia, atropia, caffein), the sensibility of the region injected is considerably diminished, while the corresponding symmetrical region of the other side of the body shows no change, or a relatively much lesser degree of diminution."

"If an injection be made at a point where a sensitive (or mixed) nerve runs superficially under the skin (for instance, about the head of the fibula, peroneal nerve), sensibility is diminished not only at the place of injection, but also over the whole surface to which the nerve is distributed; nevertheless, in the greatest degree at the point of injection."

A word as to the remedies used subcutaneously and their doses. Of course only those can be administered which are small in bulk; the next most important quality is ready solubility. The alkaloids, therefore, stand at the head of the list of hypodermic medicines, and, being the great remedy for pain, morphia at the head of the alkaloids. There is quite a wide range of variety, however, shown as to the form; thus Dr. Ruppaner prefers Squibb's liquor opii compositus, of which one hundred drops are equal to one grain of sulphate of morphia; Lebert uses extract of opium and water, of each equal parts; some use one salt of morphia and some another, the acetate being the favourite. For the benefit of those who may desire to commence subcutaneous injections, we have prepared the following posological table:—

	RUPPANER.	EULENBERG.	LORENT.
Salts of morphia	gr. $\frac{1}{8}$—$\frac{3}{4}$	$\frac{1}{2}$—$\frac{1}{2}$	$\frac{1}{6}$—$\frac{1}{3}$
Sulphate of atropia	gr. $\frac{1}{60}$—$\frac{1}{30}$	$\frac{1}{60}$—$\frac{1}{24}$	$\frac{1}{40}$—$\frac{1}{16}$
Muriate of strychnia	gr. $\frac{1}{24}$—$\frac{1}{6}$	$\frac{1}{18}$—$\frac{1}{8}$	$\frac{1}{25}$—$\frac{1}{16}$
Aconitia		gr. $\frac{1}{30}$—$\frac{1}{15}$	$\frac{1}{30}$
Tinct. cannabis indica	gtt. x—xx		
Ext. " "		gr. iij—vj	
Liq. opii comp.	gtt. v—lx		
Sulphate of quinia		gr. i—ij	gr. j$\frac{3}{4}$

The mode of regulating the dose generally followed is by means of a graduated syringe, or one with a graded piston-rod which screws down, each revolution of the screw expelling a known quantity of liquid. Such

instruments are difficult to obtain here and expensive. We have had no trouble in regard to accuracy of dose by measuring the capacity of the barrel of the ordinary syringe with a minim glass; then with a solution of acetate of morphia (gr. j ad aqua ʒj) dissolved with the aid of a drop or two of acetic acid, the dose can be very closely regulated.

Two of Dr. Hunter's rules as to doses are very good:—

"Concerning first injections, never use more than half the ordinary stomachic dose for males, nor more than a third for females.

"Should a second injection be necessary, let it not be used too soon, nor in a full dose when the patient is partly under the influence of the narcotic."

The range of application of hypodermic medication we have said is not wide; it covers, however, very important ground from the fact that pain, the great torturer of the race, from whose torments our patients imperatively demand relief, can be certainly and speedily controlled by it. The worst of all pain is neuralgic, therefore the neuralgias are best adapted to this mode of treatment; then come some of the spasmodic diseases and of the paralyses; next to these follow diseases of the eye, delirium tremens, rheumatism and gout, and malarious fevers. But without detailing the particular diseases in which it may be used, the general indications may be stated as follows:—

Those cases in which it is necessary to obtain the general effect of a remedy with the utmost possible rapidity and in its greatest power; as, for instance, in cases of poisoning, or of pernicious fever.

When a local and direct effect upon sensitive or motor nerves is desired in addition to the general effect of the remedy; as in neuralgia and paralysis.

When the internal administration of the medicine is interfered with by functional disturbances of the digestive organs; as in cases of obstinate and violent vomiting; or where the ingestion is rendered difficult or even impossible, as in cases of foreign bodies in the œsophagus, trismus, hydrophobia, and the obstinate refusal of medicines by the insane.

Under this last head came a case in the treatment of which hypodermic injections proved to us an invaluable resource; in a delicate and nervous female suffering from gastritis, vomiting was so persistent, so rebellious to all other measures, and so aggravated by even the thought of medicine, that we are convinced no other means would have sufficed to moderate and finally control the disease.

Although neuralgia alone by far surpasses all other diseases in regard to hypodermic medication, we can scarcely enter upon its consideration, certainly cannot go into particulars as to the various forms of the disease. To one point, however, we call attention; the injection of narcotics in this disease must not be looked upon as merely a palliative measure; cures will be effected by this means alone in a fair proportion of cases; thus Eulenberg reports eight cases of radical cure out of twenty-eight treated. Dr. Ruppaner also reports many cases cured without resorting to other means. To this gentleman's book we must refer the practitioner for full particulars as to the treatment of this disease, while we translate from the work of the former the following general observations:—

"The injection of morphia is the best palliative means for the relief of idiopathic as well as symptomatic neuralgia, and one that almost never disappoints.

"The injections may effect a radical cure in idiopathic neuralgia of recent date and peripheral origin, whether it affects the whole region supplied by a nerve, or only that of a single branch.

"The use of injections in the treatment of neuralgia, however important they

may be, do not justify us in neglecting to consider the cause of the disease as an indication to treatment, nor the use of those other remedies which experience has shown to be useful." (pp. 88–90.)

The twitching of the muscles after severe fractures, and the jerking of stumps of amputated limbs, so often causing patients intolerable anguish, are forms of nervous disturbance which seem to yield in a peculiarly happy manner to morphia introduced subcutaneously.

We prefer to occupy what space remains at our disposal with some of the rarer instances of hypodermic medication.

In cases of poisoning by atropia and hyoscyamus, morphia has been subcutaneously injected, and the results have been so favourable and striking that its antidotal powers in such cases can no longer be called in question. Bell, of Edinburgh, was the first proposer of this method (1857), but many authors have since reported cases—Béhier and Courty, and more recently Graefe. The cases in Dr. Lorent's work, already referred to, in which violent symptoms followed the injection of atropia, were treated by throwing morphia under the skin, and relief followed almost immediately. Eulenberg quotes at length the report of two cases of poisoning by hyoscyamus, from Rezek; the patients were children, three and a half and one and a half years old respectively; the quantity of poison taken unknown, but symptoms violent; loss of consciousness, convulsions, stridulous respiration, widely-dilated pupils; in one case continuing after emetics and other measures had been put in force; then morphia was injected, in one case one-sixth grain, in the other one-eighth grain, when recovery rapidly followed. In the first case—"after five minutes the convulsions became less frequent; in ten minutes the patient was asleep and breathing as peacefully as if nothing had happened."

The following case from Eulenberg is a striking instance of the rapidity of action and benefit of this mode of treatment:—

"In a lady suffering from facial neuralgia I injected $\frac{1}{12}$ grain of atropia; alarming symptoms of poisoning soon arose. The patient threw herself about the bed entirely unconscious, and from time to time broke out in furious delirium; the limbs and also the head were shaken with convulsive jerkings. The pupils were moderately dilated, the pulse small, somewhat increased in frequency (88). I injected immediately $\frac{1}{3}$ grain of morphia into the temporal region, in close proximity to the former place of injection. The result was striking; the twitchings ceased within scarcely more than three minutes, and in ten minutes the patient fell into a heavy peaceful sleep, with deep, stertorous [!] respiration. The pulse had fallen to sixty-eight in the minute. Upon awaking, eight hours after the injection, both pupils were of normal dimensions, and there were no symptoms of poisoning present." (p. 199.)

There is one curious fact to be noticed in this connection; however speedily and surely morphia may counteract the poisonous effects of atropia, it will not contract the dilated pupils produced by this mydriatic. We quote again from Eulenberg, page 119:—

"In some cases where atropia had been instilled into the eye for diagnostic, not therapeutic, purposes, I injected morphia (gr. $\frac{1}{4}$–$\frac{1}{3}$) in the neighbourhood of the affected eye, in order to shorten the unpleasant mydriasis. The trials were made upon seven persons, and at from two to ten hours after the application of the atropia. However surely morphia, subcutaneously injected, may act as an antidote to atropia, and however general its production of myosis in a normal state of the pupil, its effect upon the atropia-widened pupils was in the highest degree unsatisfactory. In only two of the seven patients did a slight diminution of the dilatation take place, at six and nine hours after the injection—ten to six hours after the atropia was applied; and in these two cases the amount of

atropia which reached the eye may have been small. In the remaining patients there was no perceptible effect after more than twelve hours, so that the closing of the pupil which followed in the course of two or three days could not be attributed to the morphia."

In the latter part of 1863, Prof. Nussbaum, of Munich, made the announcement that an injection of morphia under the skin, made just before or during the production of insensibility by chloroform would extend and perpetuate the condition of anæsthesia for a period of several hours. So important an announcement deserves attention, and we are surprised that the statement has not ere this been investigated, and either verified or refuted; yet we have looked through the medical journals in vain for any notice of further observations or of experiments instituted bearing on the question. The works under notice probably contain all that has yet been made known in regard to it. Dr. Eulenberg copies briefly from Nussbaum, the four cases upon which his statement is based, and then reports one case which fell under his own observation and which seems to support the theory; next he gives a case in which it failed, and in the appendix speaks of two others, operations for removal of lower jaw, in which it was unsuccessfully tried. We notice that in Nussbaum's cases the amount of the narcotic injected was large—in two cases one grain—a larger dose than it is prudent to administer in this manner to an untried patient, and a dose against which Dr. E. feels compelled to warn his readers "as seldom demanded and causing very easily unpleasant symptoms, very often distressing vomiting." In the successful case which he saw one-fourth of a grain of muriate of morphia was used, and we say it *seemed* to succeed because it was a case of castration during and after which there was much hemorrhage from repeated giving way of the ligatures, with great depression from the loss of blood, and under these circumstances it cannot be looked upon as a fair case.

To assist in solving the problem, Dr. Eulenberg instituted a series of experiments upon animals, and chose rabbits for his subjects. Unfortunately he anæsthetized them with ether; unfortunately, because whether his statement be true or not, that "the condition of the central organs during ether-narcosis is less favourable to the action of morphia than during the narcotism produced by chloroform," the terms of the problem being varied, the results could not bear upon the solution. He only found, however, a prolongation of the anæsthetic condition amounting to minutes, instead of hours, but admits, at the same time, that experiments upon animals cannot decide this question for man. He quotes in connection the experiments of Salva with dogs, the results of which were more confirmatory of Nussbaum's doctrine.

We extract from Dr. Lorent's work (p. 23) his single observation of the conjoined influence of the two remedies:—

"The combination of quietude by injection of morphia and narcosis from chloroform we have only once unconsciously observed: Chloroform was administered to a primipara for version, after draining away of the waters, on account of cross-birth; one-fourth of a grain of morphia had been previously several times injected. The patient fell into an uncommonly deep sleep, so that the difficult turning and the completion of the birth were entirely unknown to her. She awoke only after a considerable time, and had not the slightest consciousness of the entire delivery."

It is to be deeply regretted that we must await further facts before we can decide so interesting and important a question. To be able to prolong

the effects of chloroform without increasing the amount of it administered, and without adding to the risk of unpleasant results, would be a great boon to patient and surgeon in very many operations; the value of it is evident at a glance, and we know few questions which are more worthy of close investigation and an early solution than this.

For the use of subcutaneous injections of narcotics in order, by the local anæsthesia produced, to facilitate laryngoscopy, we are indebted to Dr. Eulenberg, and as this new specialty is attracting considerable attention, we believe we shall do good service by giving pretty fully what has been ascertained in regard to it. The author alludes to the failure of all the means heretofore proposed for the purpose, and quotes Tobold (*Lehrbuch der Laryngoskopie*, 1863) to the effect that operations upon the larynx will always be among the most difficult and delicate of surgery, so long as we do not possess a local anæsthetic with which we can benumb so sensitive a part of the body.

"This impelled me to try the effect of subcutaneous injections of morphia, especially as it did not appear impracticable to approach pretty nearly the internal branch of the superior laryngeal nerve in the neighbourhood of its point of passage through the hyo-thyroid membrane, and which nerve is principally distributed to the mucous membrane of the upper part of the larynx and vocal cords."

Then follows a case of polypus on one of the vocal cords; the patient could not endure the application of caustic or polypus forceps; cough and spasm frustrated all attempts at removal. After injection of one-eighth of a grain of morphia on each side, the difference was striking, and this proved to be the case upon a second trial.

The favourable result having been observed by Dr. Beneke, "an experienced auto-laryngoscopist," he made a trial upon himself—a trial which resulted in entire disappointment.

Dr. Tobold's attention having been called to the matter, he also gave it a trial in the case of an old lady afflicted with laryngeal polypus. After injection of one-fourth of a grain of morphia, quoting Dr. T.'s own words, "he could touch the lower surface of the epiglottis with instruments longer than it had hitherto ever been possible to do."

The testimony is scanty and unfortunately conflicting; it stands, therefore, another undecided question, but one far from insignificant or unimportant.

In the treatment of malarious fevers, hypodermic medication bids fair to yield as brilliant and substantial results as for any other disease; the certainty and rapidity with which it overcomes pain are rivalled by its control over intermittents, if the testimony of those who have used it is to be relied on. There certainly need be no great delay in deciding its merits, and fixing every detail of treatment. As in many sections of our country malarious fevers are the prevailing diseases during a considerable portion of the year, there is abundant opportunity for trial, as there will be an overflowing measure of benefit resulting should the observations already published be substantiated. Dr. Chasseaud, of Smyrna, was the first, we believe, to institute this plan of treatment.[1] His reports are extraordinarily favourable, so much so as to excite that suspicion which will always be called forth by too warm an advocacy of a measure. He treated cases in which the gastric symptoms prevented the usual mode of medication. Of

[1] Amer. Journ. Med. Sci., Oct. 1863, p. 533.

150 cases he saw but one relapse after three months, using generally but a single injection, and prescribing occasionally a little iron afterwards. Goudas reported, in *l'Union Médicale*, for 1862 (quoted by Eulenberg), fifteen cases with the like result. Moore reports extensive experience of this plan and with most encouraging results.[1] Turning now to the works under notice for information upon this interesting and important point, we find none at all in those of Ruppaner and Hunter, the rarity of this class of diseases in the section of country where they live being undoubtedly the reason. Eulenberg gives first his experience in solving the question whether an injection of quinia during the cold stage would stop the febrile paroxysm; he reports two cases in which he was successful, the amount used being two grains. We have, in two instances, injected that amount of quinia about an hour before the chill, and put a stop to the disease. Dr. E. next reports three cases in which a single injection was made during the apyrexia of intermittents, and sufficed for a permanent cure. Dr. Lorent's experience has not been great with this remedy; he has injected gr. $1\frac{1}{2}$ at the beginning of the cold stage, and has seen the paroxysm shortened, and the disease cured by "several repetitions" of that amount. He has not been able to cut short the disease with so small a dose as two grains. He has found the same practical difficulty in the administration of this medicine which has interfered with its use in our hands—the want of a solution sufficiently concentrated without containing so much acid as to cause too much irritation to the tissues. Moore, who was in the Bombay service, used a solution of "thirty grains of quinia, ten or twelve drops of sulphuric acid, and half an ounce of water;" of this, previously strained, he injects from half a drachm to a drachm. The bulk is here too great, as Dr. Lorent remarks, and he proposes the use of the acetate of quinia, "of which thirty grains will dissolve, by the aid of heat, in two and a half drachms of water." We have had no opportunity of trying this plan; we found, however, that quinia with glycerine is too thick to discharge well through the syringe.

We think it would be difficult to exaggerate the importance of this improvement in our art to those portions of our country scourged by malaria, and we cannot refrain from again urging an investigation of its merits upon the profession, requiring as it does no complicated apparatus, no trained skill in delicate manipulation, but simply a spirit of enterprise, careful observation, and candid report of results. Whether it will entirely or generally supersede the internal administration of quinia or not, there can be no comparison between the two modes in those cases where gastric symptoms are prominent, rendering it impossible for the patient to take or retain the bitter drug in the stomach; in those dangerous cases of pernicious or congestive fever, known through the west as "sinking chills," where the patient's life depends upon bringing the system under the influence of the remedy within a brief space of time. In addition to these points, the economic view of the question is one not unworthy of consideration in the case of so expensive a medicine as quinia; if two or even four grains will suffice instead of a scruple, the money difference to hospitals, infirmaries, dispensaries, and in army practice will be of no small account.[2]

[1] Amer. Journ. Med. Sci., Jan. 1865, p. 241.

[2] Since the above was in type there has fallen under our notice a report of a letter upon the hypodermic injection of quinia, from Dr. James McCraith, senior surgeon to the Smyrna and Aidin Railroad, read before the Royal Medical and Chirurgical Society in December last. He has found it especially useful in the

In one particular the work of Dr. Ruppaner differs from the others, and we must not omit to notice it. It contains a record of his experience with injections used in a manner different from ordinary, the fluid being thrown deep among the tissues along the course of a nerve, instead of just beneath the skin, the solution being irritant in character with the object of exciting local inflammation and suppuration. The plan is not original with this author, but was proposed by Dr. Luton, of Rheims (to whom due credit is given by Dr. R.), to the Paris Academy of Medicine (Sept. 1863), under the name of "parenchymatous substitution." We will let Dr. R. state the argument:—

"Cases of neuralgia, especially chronic cases of sciatica, are often benefited by counter-irritation along the course of the affected nerve. It is, therefore, plausible to suppose, that if we inject a strong solution of any irritant near the painful point—for example, in the course of the sciatic nerve—that deep-seated counter-irritation can be established, which, though limited in extent, would be sufficient, if not to remove the disease, yet at least materially to improve it." (pp. 26, 27.)

He claims that a saturated solution of chloride of sodium, or a strong solution of nitrate of silver, deeply injected, does not cause much pain, is not followed by *diffuse*, but by *circumscribed* inflammation and suppuration. The cases he reports are five in number, and support his theory so far as so limited a number can do; they are interesting certainly for the reason he claims, as being "the first cases of neuralgia treated in the United States by the injection of *irritants*." For further particulars as to this mode of using injections, we must refer our readers to the work itself.

Hypodermic medication is yet in its infancy; already, as we have shown, it presents a number of most interesting and important practical questions for solution; that in regard to these, and in other respects, it has a brilliant future before it, we do not doubt, and shall await with interest further knowledge of the subject. J. C. R.

ART. XVIII.—*Stimulants and Narcotics, their Mutual Relations; with Special Researches on the Action of Alcohol, Ether, and Chloroform on the Vital Organism.* By FRANCIS E. ANSTIE, M. D., M. R. P. C., Assistant Physician to Westminster Hospital, Lecturer on Materia Medica and Therapeutics to the School, and formerly Lecturer on Toxicology. 8vo. pp. 489. London: Macmillan & Co., 1864.
The same. 8vo. pp. 414. Philadelphia: Lindsay and Blakiston, 1865.

UNDER the guidance of researches which have for their aim the comprehension of the most recondite processes of the animal organism, a new school of physiology and pathology has made its way to the favour of the medical profession. It has able representative men, and its teachings

pernicious form of malarious fever, and details the case of a patient "who had been in a profound coma for a long time, and was incapable of swallowing anything, and was rapidly relieved by the injection of three grains and a half of quinia in each arm." Dr. McCraith "does not think the hypodermic method will supersede the usual treatment by the mouth, but that it will prove extremely useful where a great scarcity of the remedy exists, or where the symptoms will not allow of its exhibition by the usual method.

have had a decided influence upon the practical departments of medicine. It must be admitted that the true natural history method of conducting inquiries, applicable in the development of doctrines, which, of late years, have invited acceptance, has had a potent fascination in securing converts, and in moulding opinion with respect to the end and aim of all medical inquiry—the proper treatment of the maladies of the corporeal system. An impetus has been given, and, we conceive, in the right direction, to the investigation of medical truth; yet that a point has been attained where positiveness can be asserted, and that the deductions which have been made are in every particular correct, cannot be maintained. Observation and experiment have, indeed, in the last few years, been so greatly extended, that generalizations, which previously were not warranted, may now be admitted; but the area of investigation has not been fully explored, and can only be defined by the recognition of the last discoverable fact; hence, new generalizations will be called into existence as new revelations augment our knowledge.

There are three directions which biological science has taken in the hands of the observers, who have of late been engaged in prosecuting inquiries. The researches and expositions of Schwann and Schleiden have laid the foundation for the views at present embraced under the title of *cell doctrine*, which, in its application to diseased structures and metamorphic abnormal changes, has found a powerful advocate in Virchow. Another direction has been given to the study of life processes, by the labours of Magendie, Bernard, Brown-Séquard, Müller, Hall, and others, with respect to the functions and modifying influence of the nervous structures; while, lastly, the importance of chemical and physical operations in the vital economy has found expression in the writings of such authorities as Liebig and Mülder, Matteucci and Mialhe. All the phases of investigation and discovery mentioned have their significance and importance; they are the reflection of facts whose interpretation has revolutionized modes of thought and of explanation regarding the operations of the organic system. If any one characteristic distinguishes scientific inquiry of the present time from that of periods which have passed, it is the contemplation of the elaborate processes of the animal organization from numerous stand-points. The truly philosophical student of medical science cannot be the partisan disciple of any one-sided opinion. The truth has been made apparent, that for the acquisition of rational and stable conclusions, of true knowledge, there is entailed the necessity of fully appreciating the correlation of all ascertained facts in the several departments of discovery, of co-ordination by careful comparison of all the materials acquired by observation, and of rigid induction.

The subject embraced by stimulants and sedatives has its origin in the first inquiries into the appropriate methods of treating disease. It may, indeed, be said that it is coeval with medical history, as all the remedies which have been devised, having either directly or indirectly stimulant or sedative effects, may be arranged under one or other of these two great classes. It is the warp on which have been woven also the rational methods that have been devised for the alleviation of human derangments, and constitutes the foundation of all therapeutics. It may appear extraordinary that with all the light that has been accumulating for ages, there is still presented matter for discussion, and that in this nineteenth century disquisition may be entered upon, which has more than one side of proof and argument. Such, however, is the obscurity of the source of vital

force that manifestations of its existence admit of more than one plausible explanation. The comprehension of vital phenomena must penetrate to the very "abdita rerum" of the organic system, and the most difficult problems are presented for examination and solution. In the review of the book before us, it will be our endeavour to treat this subject in the just spirit of an inquirer into truth, unbiassed by any prejudice and committed to no hypothesis. Attention will first be directed to stimulants.

An analysis has been made by Dr. Anstie of the general sense in which the terms stimulants and stimulation are accepted, with an historical account of the introduction of these modes of expression. To the first attention will now be directed; and to the latter we shall advert in the appropriate place, as we proceed with the exposition of what is conceived to be the true designation of the words. It will facilitate our progress, and aid us in the discussion, if, at the outset, the conclusions are presented which have been arrived at by the author, while his mode of reasoning and illustrations will receive the notice which is due them as a portion of the elucidation of the subject. The following "proposals" are conceived by him to be justified.

1. "That the use of the word 'stimulant' be restricted to agents which *by their direct action tend to rectify some deficient or too redundant natural action or tendency.*"
2. "That agents which produce excessive and morbid action of any kind in the organism be refused the name of stimulants, even though smaller doses of them may act in a truly stimulant manner."
3. "That the word over-stimulation be entirely rejected from use as unphilosophical and contradictory in terms."

In its ordinary acceptation, the word stimulation is synonymous with excitement, and stimulants are designated to be the agents or means by which this excitement is produced. By excitement is implied *action* or *activity* in contradistinction to the reverse, *inaction* or *quiescence*. The one may be said to be a positive state, while the other is negative or passive. There is nothing obscure or difficult about these definitions; they appeal at once to the understanding through experience of the senses and the judgment, and enter into the every-day language of mankind. The causes of action, of activity, of excitement, are as numerous as the forces which pervade the universe, whose effects are manifested in a thousand ways for contemplation and for study, and with regard to which mind has been exercised in all the branches of science that have been cultivated. It will be conceded on all hands that there are two elements which essentially enter into the problem of activity and excitement; one is the capability of being impressed, or impressibility, and the other is the existence and application of the means by which this impressibility can be reached, the result of which is some form of action. To comprehend such simple propositions no metaphysical abstractions are necessary; the axiom is a plain one. Excitement and excitability are now employed almost exclusively in a restricted sense in connection with living beings.

The source of impressibility, from which excitement in the organic system proceeds, has ever been the theme of wild speculation and crude conjecture, in accordance with the spirit of the times. It has been connected with the soul or spirit, and more or less confounded with pyschological peculiarities in the conjectures of the ancient physicians, or has been attributed to a presiding demon, on which, from the mouth of that blatant medical swaggerer, Paracelsus, the name of Archæus was bestowed.

Even with the earlier medical inquirers, who, after the revival of learning, most conduced to the progress of knowledge, mysticism ran riot in the endeavour to explain what is inexplicable, the source and nature of the life force which constitutes the basis of vital processes. With the abandonment of attempts, beyond the human powers, to comprehend life-essence itself, and the realization of the futility of such speculation, came simplicity of language. That a state or quality exists in living tissues which is responsive to exterior influences, a species of *vis insita*, to which are to be referred the various movements of the economy, may be accepted by the understanding, in the same way as gravity, or attraction, or any other inscrutable force pervading matter. This is as far as our knowledge penetrates, for of its nature we are profoundly ignorant. The vital processess, and not their remote cause, become the legitimate objects of investigation.

Is the excitability identical in all the tissues and organs of the body, or has each one of them something which is peculiar to itself, which controls and regulates the formative operations and vital actions which are going on in it, is a question, the solution of which is as difficult as the preceding. The following remarks of Virchow have reference to this point:—

"If we speak of the life of the individual parts of a body, we must also know in what way life manifests itself, and whereby it is essentially characterized. This characteristic we find in *activity*, an activity indeed in which there is displayed by every single part, whilst it contributes its contingent, according to its peculiarities, to the general activity of the body, something identical with the life of the other parts; for else we should be in no way justified in regarding life as something in every case similar, and derivable from some common origin. This vital activity is, as far at least as we are able to judge, nowhere, in no part whatever, carried on by means of any cause allotted to it from the very beginning, and entirely confined to it, but we everywhere see that a certain *excitation* is necessary for its production. Every vital action presupposes an excitation, or, if you like, an irritation. The *irritability* of a part therefore appears to us the criterion by which we can judge whether it is alive or not."[1]

The investigation of the effects of stimulants extends into all the tissues and organs of the body. It is inevitably complex from the close relation which exists between the tissues and organs, and their mutual dependence. In this resides the difficulty of analysis and in the determination of species among the agents which are included by the class of stimulants. They have been divided into *general* and *particular*, but the nature of the economy is such that the distinction is tenable only in the broadest acceptation.

It has been stated that stimulants induce action; without them in a natural state no action can be continued; and the impression may at times be attended by more than normal action without perversion of function, or structural damage of organs.

Among the organic structures none are more palpably reactive to stimuli than the nervous. Experimentally the nervous tissue is the only one of which it can be affirmed that the effects are directly produced, as with respect to other tissues there is sufficient doubt for argument and discussion, whether the results from the application of stimuli arise from the direct impression upon them, or through the instrumentality of nervous matter. In the study of the operation of stimulants upon the nervous

[1] Cellular Pathology, Am. ed., p. 329.

system, we must be guided by the physiological laws, which so far have been discovered to pertain to it, and this involves the full scope of nervous influences in their connection with all the organs. Under the operation of this class of agents the nervous system is to be considered as furnishing the means of communication with the external world, as well as presiding over functional and organic movements of the organs, indeed the distinction that has been made between the animal and organic movements is obvious under the employment of stimulants, and consequently the sympathies which are associated with either class are brought into relief under their operation. The will-sympathy, the sensori-motor, the purely reflex or automatic, and the nutritive sympathies are all obedient to their impression. Pure nervous action is induced by an impression upon the peripheral termination of the nerves distributed throughout the structure of the organs, or upon the central nervous masses from which irradiation of motor power proceeds. In the case of the direct impression upon the peripheral extremities of the nerves it is conveyed, in the line of *cognizance* or *incidence*, along the sensitive nerves to the central nervous masses, while the effects which follow, being due to reflex action, are produced in the line of reflexion to the organs and tissues. This impression may or may not be attended with perception. Where an impression is made upon the central nervous masses without the instrumentality of the incident nerve and an increase of motor power is transmitted to the organs, absorption for the most part is indispensable.

From physiological induction the conclusion is inevitable that certain remedial stimulants by impressing the peripheral terminations of the nerves react upon the entire system. In this way it is that local stimulation is transformed into general, for the application of heat, of mustard, of turpentine, or the volatile oils, of ammonia, and capsicum, to the surface, induce a wide spread effect upon the organs irrespective of the reflex manifestations perceived in the part itself. When like agents are introduced into the stomach or alimentary canal a similar operation becomes manifest, the reflection is not only back again to the mucous surfaces interested, but extends to the heart and general circulation, to the respiratory apparatus, to the secerning organs, and is exhibited in the rise of temperature, in the increase of absorption, and in the nutritive processes, while the nervous operations of every description are under renewed or augmented impulsion.

When medicinal articles are introduced into the economy and have ample time for absorption into the bloodvessels so as to be carried to the central nervous masses, and there produce their impression, more decided manifestations of their influence are brought about. In this way it is that an impression of stimulation commenced upon the peripheral nerves can be sustained and made more durable and effective. In the depressed states of the organism, as from cold, or exhaustion of vital energy from any cause, both these modes of operation by stimuli are highly important. From the comparison of the condition of vital movement in the organs and tissues before and after the use of such medicinal agents, it is clear that an increase of action has been produced, for rapidity of movement is the index of activity. With reference to the occurrence of active phenomena after the employment of stimulants, the definition which has been given of this class by systematic writers is perfectly in accordance with the results which are presented.

But when stimulants are introduced into the circulation they are

carried in its round to *all* the tissues. They are not only conveyed to the interior substance of the central and the distributed nervous masses, but into every organic texture, so as to impress the life force which is peculiar to it. There follows, as a consequence, from agents thus conveyed, a modification of the interstitial movements and conditions. With respect to this mode of operation the question arises, are the interstitial movements and operations of the tissues under the control of the nervous system as the instrument of activity, or is there an inherent self-sustaining energy which is independent of this commanding power in the economy, and which resides in the primary or basic structure of the tissues? The examination of this question is connected with the consideration of the doctrines of cell arrangement and cell action. The most eminent exponent of cell influence in the operations of the animal body is Virchow. It is from him, therefore, that we may derive the exposition of the views which are entertained by this class of physiologists in opposition to those which are advocated by the so-called neuro-physiologists and pathologists. The antagonism which has arisen between these two classes of interpreters of life movements has, perhaps, in the too partial zeal which is evinced, led to an unwarranted leaning to one side or the other, as all the facts which experiment and observation have unfolded must be duly weighed, not only for their own separate intrinsic value, but for their bearing upon the explanation to be given of all the vital processes. The advocacy of an independent force in ultimate cell construction of the tissues is emphatic on the part of Virchow, and he has argued his cause of *irritability* in them, or the power of excitation irrespective of nerve influence by appropriate stimuli, with especial ability. It is, therefore, necessary that the grounds of his conclusions should be presented.

The first position assumed by this author is with respect to the anatomical distribution of the nervous system relatively to the ultimate constitution of the tissues. It is admitted by anatomists and physiologists that cell structure, whether it be that which in different forms enters into the composition of animal structures, or the "connectile tissue," constitutes the groundwork of all the organs. Taking the skin as the subject of illustration, he states:—

"In the greater number of papillæ we see a single, or when the papilla is very large, a branched vascular loop. The *majority of these vascular papillæ have no nerves;* others again, which contain tactile bodies, no vessels. If we imagine the vessels of tactile bodies removed, there remains only a very small quantity of substance in the papillæ, but within it there are still morphological elements, and it is easy to convince one's self that connectile tissue with its corpuscles (which latter after injection are very easily distinguished from the vessels) is in immediate contact with the cells of the rete mucosum."[1]

Again, after describing the nervous terminations in the Pacinian bodies (flat prolongations), and by loops, he says:—

"We here find two complete contrasts in parts which in themselves are quite analogous; for on the one hand we have nerveless but vascular, on the other non-vascular papillæ, yet provided with nerves. The peculiar relations which the layers of the rete mucosum and epidermis bear to the two kinds of papillæ, do not appear to present any essential differences. They are nourished just as perfectly over the one sort as over the other, and seem to be just as little provided with nerves over the one as over the other."[2]

[1] Cellular Pathology, &c., Am. ed., p. 280. [2] Ibid., p. 278.

Still further:—

"Thus much, however, we can even now say, that it is incorrect to imagine that a special nervous branch exists in every anatomical division of the skin: just as physiological experiments show that considerable sensitive districts exist in the skin, so also more minute histological investigation teaches us that there is a relatively scanty termination of nerves upon the surface. If, therefore, we think fit to divide the skin into definite territories, those appertaining to the nerves will, as a matter of course, be larger than those belonging to the vessels. But every vessel territory (papilla) also which is marked out by a single capillary loop is divided into a series of smaller (cell) territories, all of which certainly lie along the banks of the same vessel, but still have an independent existence, each of them being provided with a special cellular element."[1]

From the anatomical arrangement he argues an independence with respect to physiological and pathological activity in cell structure, as

"It is quite inconceivable how a nerve which lies in the middle of a whole group of nerveless parts, can contrive to force a single papilla from among this group, with which it has not the slightest connection, into a state of pathological activity in which the remaining papillæ of the same territory take no share. Just as difficult is it, in the diseases of non-vascular papillæ, to find an explanation which shall accord with the views of a humero-pathologist. Even when in a vascular papilla, the different cell territories attain different states, these would not admit of a ready explanation, if we were to regard the whole process of nutrition in a papilla as directly dependent upon the general condition of the vessel which supplies it."[2]

Another source of argument in favour of the excitability of the cell organization of tissues irrespective of nervous action is derived from the modifications which are undergone by those not possessed of nerves when stimuli are brought to bear directly upon them. An illustration of this is taken from articular cartilages, as in Redfern's experiments. "If we draw a thread through a cartilage, so that merely a traumatic irritation is produced, we see that all the cells which lie close to the thread become enlarged through an increased absorption of material. The irritation produced by the thread extends only to a certain distance into the cartilage, whilst the more remote cells remain altogether unaffected." The same opinion is derived from the cell structure in the skin and other tissues in the body, and it is urged by Virchow, "that such observations cannot be explained otherwise than by assuming that the stimulus really acts upon the parts to which it is applied; it is impossible to conclude that it is conducted to the nerve by any channel perhaps more in accordance with the neuro-pathological doctrine, and then only by reflex action conveyed back to the parts."

The peculiar excitability of vegetable textures, as exhibited in what is termed the irritability of plants, and in the growth or the metamorphoses of which they are susceptible, as well as that of the lower orders of the animal creation, where no nerves are found nor even muscles, has also been advanced, as a still further argument, in favour of the positive independence of cell organization in the higher orders of animals.

The different actions that can be provoked by the impression of stimuli may be placed under the heads of *functional, nutritive, and formative*, and therefore these three modes of operation become the subject of consideration. Although the functional and nutritive, and the nutritive and formative processes are, in a number of instances, intimately blended, and

[1] Cellular Pathology, Am. ed., p. 282. [2] Ibid., p. 283.

there may be a difficulty of drawing the line of demarcation between them, yet a clear distinction in so many cases may be recognized that there can be no embarrassment in making the application of the statements which have been made with respect to the manner in which stimulating agents operate. In the discussion of these points we shall follow the order that has been given. In accordance with this, *functional* operations first demand attention.

Muscular contraction is intimately associated with functional activity of organs. It is either the sole operative power, or it is essential as one of the operative forces by which function is conducted; in point of fact, wherever muscular fibre exists, an office is assigned it which is connected with the functions. Long before the doctrine of cell action took definite form, the disquisition with respect to independent contractile power in the muscles occupied the attention of physiologists. Haller, the father of modern physiology, was an uncompromising maintainer of the position that muscular contractility, which he denominated irritability, was inherent. This inherent capability of contraction by muscular fibre has been the moot point of physiologists even to the present day, and both aspects of the question have been maintained by authors of eminence. Tiedemann agreed with Haller in regarding the muscular contractility as a peculiar property resident in the muscles themselves, but believing that the maintenance of this property in them was dependent upon nutrition and nerve influence, he further held that the nerves do not merely conduct the stimulus which excites the muscular contraction, but afford an essential condition for the manifestation of the vital property of the muscles. Müller and Hall are advocates of the nervous origin of contractility, while Carpenter and all the advocates of cell action are supporters of the opposite view of the subject. It is difficult in the present position of the question to pronounce positively upon the point at issue. The close connection between nervous control over muscular contraction and the function which muscles are destined to perform, and the whole development of nervous sympathies in which muscles are interested, almost preclude right judgment in so obscure a problem. Experiments may be adduced which inferentially incline to both sides, and the real difficulty lies in an almost impossibility of isolating the primary muscular fibre and submitting it to experimental study. The nearest approach to this has been made by Mr. Bowman, who informs us that a single fibre completely isolated from its connections may be seen with the microscope to pass into a state of contraction under the influence of direct irritation. Relatively to stimuli, it may be safely affirmed, that even admitting an independent life force in muscular structure, which manifests itself by contraction, this life force is so closely connected with the life force of nervous structures as to be under its control, obedient to its commands, and in a measure impaired by its abstraction.

Through the medium of the nervous system stimuli affect the several muscular apparatuses which are provided for the sympathies concerned in maintaining the existence, and conducing to the well-being of the individual. Most of these sympathies are automatic and are classed under the excito-motor, although the other sympathies, as the will, the sensori-motor, and even the nutritive, come within the circle of influence by nervous action. Functions of organs are deeply interested in the preservation of these sympathetic associations in the state of normal efficiency.

Muscular action in the heart is the foundation of the circulation of the

blood by that organ, and there is no doubt that it can be impressed by causes operating through the nervous system. Leaving out of the question moral or mental impulses, agents which operate upon the nerves by a reflex action are capable of quickening the movements of the heart. That this organ can be excited by the direct application of stimulants to its nerves has been shown by experiment. Humboldt, by galvanizing the cardiac nerves in a (apparently) dead rabbit, produced contractions; and Burdach, by galvanizing the cervical portion of the sympathetic nerves or the inferior cervical ganglion, accomplished the same result.[1] The latter author reaccelerated the actions of the heart in a rabbit after they had begun to fail, by touching the sympathetic with caustic potassa and ammonia. From the experiments of Legallois, Wilson Phillip, and others, it is accepted as a conclusion by Müller "that the brain and spinal marrow have a great influence on the motions of the heart, that its movements may through their agency be accelerated or retarded, depressed or invigorated."[2] If, then, the heart can be impressed through the nervous structures with which it is provided, and taking, as it does, a most distinguished place as an index of the impression of exterior and interior agents, there is no reason to doubt that, in the same way, medicinal stimuli applied to near or remote organs of the body can, by afferent and efferent or reflex action, produce their effects upon this as upon any other muscular apparatus. That the heart should be independent of the nervous system, so far as an absolute maintenance of its actions is concerned some time after a separation from the connection with its central masses, is a most important salutary provision of nature, as otherwise it would be subjected to deranging and even fatal contingencies. Were this not so, nervous collapse would be followed by irrecoverable suspension of movement of this essential organ of life. The heart then must be quickened in its activity by the application of stimuli to the skin, the stomach, or the bowels, and in depressed states of the circulation, reaction has a genuine source in the impression made upon peripheral nerves. But an impulsion commenced in this way must be sustained by the introduction into the circulation, and a direct influence upon the organic structure of the heart, and this may be either upon the inherent excitability or by modifying the nutritive acts in the interstices of the tissues. In the production of persistent effects upon the action of the heart, the influence derived from the direct impression upon the nervous centres by a conveyance of stimulating material into their structure, and a transmittal of the augmented nervous motor force thus generated, should not be overlooked.

What is true with regard to the heart is especially so in connection with the respiratory movements. There can be no dispute with reference to the relation between the respiratory apparatus and the spinal marrow. If the communication be cut off from the medulla oblongata, the movements of the chest are suspended, and, as now understood by physiologists, the respiratory efforts are maintained automatically by reflex action, in

[1] Elements of Physiology. By J. Müller, M. D. London, 1840. Translated by Baly, i. 202.

[2] The reverse of stimulation, or depression of the heart's actions by shock or transmitted influence of lesion has been cited as additional evidence of the control of the nervous system over the heart. Thus, blows on the stomach or elsewhere produce stopping of the heart, and, as found by Brown-Séquard, when either the par vagum, or the spinal cord, or the splanchnic nerves, are cut, any kind of irritation may be made on the abdominal sympathetic without a stoppage of the heart's action.

obedience to an excitant impression upon the periphery of the nerves distributed through the parenchyma of the lungs. The probability is that the inciting material is carbonic acid, although the discomfort from the presence of venous blood, and the relief afforded by its oxygenation, in which resides the "besoin de respirer," may give rise to inspiration. It has been asserted by Dr. M. Hall, that the spinal marrow never sleeps, and hence the persistent recurrence of the rhythmical movements, which are necessary for the continuance of life. The whole series of sympathetic associations are known to be brought into play by the application of stimulants to the excitor nerves which can be traced to the spinal centre; hence, the production of forced respiration manifested in sudden inspiration and expiration attending sneezing, coughing, &c., which arises from this connective arrangement.[1]

The stimuli which impress the heart must extend their operation to the lungs, as the state of the respiration keeps pace with the activity of the circulation. Exercise and heat, from their acceleration of the circulation, have a corresponding effect upon respiration.

Reflex stimulation is operative in connection with the stomach; in this way the organ is appealed to, in order to sustain the action of other organs; or it may lead to perversion of the normal state, as is illustrated by vomiting. Upon the same principle the motion of the bowels, whether peristaltic or in the forced efforts of defecation,[2] and the operation of voiding the bladder may be explained. So far, then, as the nervous system is concerned in the functional acts performed by muscular structure, this mode of operation through reflex action is one of the most prominent and best understood operations of the economy.

The *secretory* functional operations are obedient to the impression of stimuli. That this obedience may partly be referred to the nervous system, and accounted for by reflex action, has the sanction of experiment. The introduction of sapid bodies or irritants into the mouth will produce an increased flow of saliva; thus pellitory or tobacco are sialagogues. In the beautiful experiments of Bernard, the full philosophy of this association between nervous action and secretion has been displayed before us. In the submaxillary gland, when the secretion of saliva was promoted by the introduction of a little vinegar into the mouth, the colour of the blood in the return vein became of a red arterial appearance, and as the function ceased to be performed, slowly became dark. To determine how far this change was dependent on nervous action, the branch of the *lingual nerve* distributed to the gland was isolated, and a tube placed in the duct. *When the nerve was galvanized, the secretion was brought on, and with it the red coloration of the blood in the vein.* When the galvanic stimulation ceased, the secretion was suspended, and the blood became dark. When the nerve was tied, the blood was dark, and secre-

[1] An illustration may be derived from the case of extreme exhaustion in consumption, and the liability to asphyxia from accumulations in the bronchial passages, where relief is derived from calling into play respiratory sympathy by the administration of carbonate of ammonia. The stimulation made upon the stomach is extended to the spinal marrow, and reflectedly to the muscular parietes of the chest and to the diaphragm. Coughing is thus induced to the relief of the patient.

[2] That the peristaltic movements of the bowels are affected by impressing the nervous system is shown by Müller. He applied potassa fusa to the cardiac ganglion in a rabbit, and the peristaltic movements of the intestines became very vigorous.—*Elements of Physiology*, vol. i. p. 786.

tion suspended; but when the nerve was galvanized, the red colour of the blood appeared as before, with the occurrence of secretion. When the means of accomplishing reflex action were interfered with by cutting the branch of the lingual nerve, the application of vinegar to the mouth produced no secretion. The same experimenter discovered that the secretion of urine could be produced by inserting a tube into the urethra.

There is proof to be adduced of the production of other similar phenomena which have a like explanation. Dr. Brown-Séquard has stated that several times he has seen in dogs having an artificial gastric fistula the injection of warm water into the rectum, followed by the secretion of gastric juice. Dr. Gairdner records the case of a man whose œsophagus was divided, and who had a secretion of six or eight ounces of saliva during a meal of broth injected into his stomach. The excitation of the nerves of taste produces an abundant reflex secretion of gastric juice into the stomach, and of bile and pancreatic juice into the bowels. The increased flow from the glands affording the above-named secretions may likewise be promoted by stimulation to their ducts, and sufficient evidence has been afforded of an augmented flow of milk by excitation to the nipple. These have been instanced as nutritive sympathies, and although inseparable from cell action, yet this is supplied by areolar circulation, which again is provided with nervous fibrillæ.

There may be matter for speculation, why the glandular system of the fœtus, perfect in its functional capabilities at birth, has been so latent until the child has been ushered into the world. Why should not the liver, for instance, secrete so abundantly as to cause purgation in the uterus? Is it not due to the want of excito-motor nutritive excitement from the alimentary canal? And so of other secretions. The bladder of the new-born babe is sometimes, as we have seen, forcibly emptied, as soon as cool air is brought in contact with the surface; this evinces that in a modified degree secretion has been going on *in utero;* but there is no urinary odour to the liquor amnii to show that it is habitual to the fœtus to empty the bladder, and it must therefore be but to a limited extent that urine is secreted. Dr. M. Hall, in a paper published in the *London Lancet* for 1857, announced the existence of a nervous arrangement which was termed excito-secretory. A claim for originality, in connection with this idea, was subsequently admitted by him in favour of Dr. H. F. Campbell, of Georgia. A separate system of nerves has been supposed to be appropriated to the special purpose of regulating secretion, but this may be resolved into the function of the ordinary sympathetic, which has its origin and connections with the medulla spinalis.

It may be asserted that with all the evidence before us of reflex secretory action, the whole series of phenomena are due to the effect upon the capillary circulation of each particular secretory organ. This view is taken by Bernard when he states "that the special nervous system, which animates each capillary system and each organic tissue in each part regulates the course of the blood in accordance with the especial chemical functional condition of the organs."

Dr. Anstie has inferred that increased secretion does not necessarily imply stimulation of the secretory glands or of the nerves governing them, and this inference is predicated upon the researches of Bernard and Brown-Séquard, where the section of the sympathetic cervical nerve was followed "by intense congestion of the vessels beyond the point of section, contraction of the pupil, copious secretion or flux from the

several glands of the corresponding part." The experiment has been detailed of tying the lingual nerve and suspending secretion, of galvanizing it and producing secretion. When the sympathetic is galvanized, the blood becomes black; when it is cut, the blood becomes red. Now a red coloration of the blood is an attendant upon secretion, and black coloration is associated with non-secretion; if the sympathetic be cut, the blood becomes red and secretion occurs.[1] The explanation, therefore, is, not that the nervous influence being cut off secretion takes place, but that there is the preponderance of another nerve, the lingual, which causes the blood to flow more freely. The expulsion of saliva is associated therefore with a state of repose of the sympathetic and of activity of its antagonist, the lingual. A difference also was perceived in the character of the secretion, in the richness of the blood in fibrin, and in the amount of oxygen in the blood when the nervous actions were interrupted or quickened.[2] The facts, cited from Dr. Gairdner and others, of flushing of the face and sweating of the side as a consequence of pressure on the sympathetic of the neck by a tumour, and of Dr. Anstie's own interesting case, which is one of reflex paralysis affecting the circulation with flushing and copious sweating of the whole left side of the face, cannot be said to have another solution than the one which has been given.

Closely associated with the question of nerve control over secretion is that of the influence of the nervous system upon the nutritive acts and processes. In order to have a full appreciation of this interesting inquiry, it becomes necessary to determine what constitutes the nutritive acts and operations. By nutrition is meant the maintenance of the corpuscular constitution of the tissues, their growth by the production of the same forms of organization, and when impaired by waste or accident their regeneration and repair.[3] Irrespective in their essentiality of direct nervous or vascular dependence, as the nutritive acts are maintained to be by the advocates of the pure cell doctrine, they cannot be said to be so free from the control of either. The ultimate structures must have their due supply of material for assimilation; this is accomplished through the instrumentality of the vessels by which is supplied the nutrient fluid, the blood, which is compound in its nature and contains the elements from which can be formed, by an elective organic chemical process, each particular tissue of the body. If the vessels are obstructed, the vital activity is impaired, as neither wonted stimuli or nutriment can be conveyed to them, and death more or less extensive follows. The acts of nutrition resolve themselves into physico-chemical and vital, and the points which are involved in the inquiries into the nature of nutritive operations are the most obscure in the whole round of physiological research. In respect to these our information is encompassed with the greatest difficulty, and there is danger of mingling facts with assumptions. It may be said that much advance has been made towards ascertaining the part which is allotted to physical and chemical processes in sustaining nutrition; but there is an agency which lies deep at the foundation of this operation. It is that power

[1] Bernard: Journal de la Physiologie.

[2] Journal de Physiologie, p. 25.

[3] So long as normal nutrition is carried on, the definite form of ultimate tissues is preserved, but when nutrition is perverted from causes which are foreign to it, discordant elements enter into combination and new forms are communicated to the extent of completely metamorphosing the tissues. The modifiers may be vital or physico-chemical.

or force of assimilation which appropriates the substance matter that is afforded, converting it into an integrant portion of the tissue and endowing with life and animation the previously lifeless material that is supplied for nutriment. Herein lies the mystery that cannot be solved —the imparting of life force to inanimate substances, with respect to which we are as much in ignorance as in the earliest stages of investigation.

It is a law that life can only be perpetuated by a renewal of the material of the elementary structures, not only by the conveyance of new matter for assimilation, but the removal of the old, and its excretion from the organic mass. What is conveyed in the fluid state may be rendered solid, and what has been solid becomes liquefied and in this form is excreted. The circulation of the blood by carrying and removing nutrient materials is an important feature in the higher orders of animal life, as nutrition is effected through the coats of the capillary vessels, and these are permeable only to substances in solution. Müller remarks that "the permeable parietes of the capillaries are, in fact, no impediment to the process of nutrition, which appears to consist in matters dissolved in the blood being attracted from it by the organic particles in meshes of the capillaries, while, at the same time, the old materials of the particles are returned into it." Osmosis may therefore be considered as intimately connected with the radical nutritive processes, or, in other words, with cell action.

Sufficient detail has been entered into, in the preceding exposition, to enable us to consider the control which nerve influence has over nutrition, and to determine how far it can be impressed in this way by stimuli. By Dr. Séquard it is asserted "that an irritation starts from an excitable part of a nerve; it reaches the nerve centres, and thence being transmitted to a more or less distant part of the body it produces either a contraction of a bloodvessel, and through this a diminution of nutrition, or it acts directly upon the tissues and produces an alteration of the interchanges between them and the blood."[1] In support of this opinion the cases are cited of injury to one eye being reflected to the other; of neuralgia of the trigeminal nerve producing congestion of the eye, and a similar congestion being occasioned by a caries of a tooth. Reflex inflammation by the neuropathologists is accepted as a positive occurrence. Atrophy of parts is also attributed to this cause. The results which follow upon cutting the sympathetic have also been adduced as indicating the importance of nervous supply to the tissues; thus the division of the sympathetic in the neck, or the destruction of the cervical ganglia, is followed by dilatation of the bloodvessels, injection of the conjunctiva and of the ear, elevation of temperature, increased secretion of tears and cerumen in the ear, more rapid absorption and increased sensibility; while the nutrition of the eye is so modified and interfered with as to cause retraction of the eyeball, &c. These results have occurred in the hands of Bernard, Séquard, and others. In the experiments upon the trifacial by Magendie, the cornea became opaque or red and inflamed, and secreted a puriform lactescent matter; the eyelids were wide open and immovable, or stuck together by tenacious puriform matter; the iris and the interior of the eye became red and inflamed and formed false membranes, which filled the chamber of the eye and gave opacity to the cornea, or the cornea became ulcerated

[1] Lectures, p. 156.

and the contents of the eye ran out so as to give place to a tubercle. Abercrombie's observations of similar results from paralysis of the fifth nerve may also be referred to in illustration of such nutritive derangement.

But there is another side to the explanation of the phenomena which have been presented. It is the essential feature of cell doctrine that a "power is possessed by individual parts (tissues) of taking up, when excited by definite stimuli, more or less matter and transforming it." "A part which nourishes itself can, in doing so, either limit itself to a mere maintenance of its existence, or may, as is seen in pathological cases, take into itself a larger quantity of nutritive material than is wont to happen in the ordinary course of things." The arguments adduced by Virchow in favour of this independent nutrition have, to a certain extent, been presented; but further, as in the instance of cartilage, the skin may be subjected to the experiment of drawing a thread through it, and here we have, what is not the case in cartilage, whole series of nerve territories intersected by it, yet the whole of the *territories belonging to the nerves* which lie along the thread are not thrown into the same morbid condition, the nutritive irritation being limited to the immediate vicinity of the thread. Around the thread drawn through the skin, a number of young cells generally show themselves as early as the second day, and the same change may be brought about by the application of chemical stimulus. "If, for example, caustics be applied to the surface of a part, the first thing that happens is that the cells swell up, and then when the process follows a regular course, divide and begin to proliferate more or less abundantly," and it matters not "whether the part be provided with nerves, or destitute of them, whether it contains vessels or not."

With respect to the local inflammations which follow lesion of nerves, as in the case of the eye, these are attributed to the irritation which is produced by foreign bodies, which view is based on the experiments of Snellen, who "sewed before the eyes of animals, in whom the fifth nerve had been cut, their still sensitive ears. From that time the animals had no more attacks of inflammation, inasmuch as on the one hand a direct protection was afforded to the eye, and on the other the animals were preserved from all traumatic influences." The inference which is drawn is that there is no form of disturbance of this kind known which can be traced to the abolition of the action of a nerve. "There is always required in addition some special irritation, either of a mechanical or chemical nature, and proceeding either from without or from the blood, in order to induce the peculiar liability."[1]

From the present state of information the conviction cannot be dismissed from the mind, that while nutrition may be dependent upon a force resident in the tissues, and upon operations which are vital, physical and chemical, which are intimately blended and co-ordinated for the production of the phenomena presented to observation, still, as there is needed the office of the bloodvessels, and as these are impressed by the action of the nerves, this nutrition is indirectly under the influence of the nerves, and to an extent modified by their activity or the reverse. It has been seen, from the experiments which have been cited, how far the blood is changed under the action of the vessels produced by agents through the

[1] Virchow, Cellular Pathology.

nerves distributed to them, that it was red or black as contraction or expansion occurred, and that it was to a greater or less extent oxygenated. It may also be assumed that the physical acts of osmose must be influenced not only by the condition of activity or otherwise of capillary circulation, but by the nature of the nutrient fluid. The chemical changes which are involved in nutrition must be governed by the fluctuating nature of the material, hence nutrition may be regarded as a circle of links which are mutually dependent. The reflex action of stimuli upon nutritive operations in the tissues may, therefore, be admitted in the same way as reflex secretory action.

Having presented the evidence of the agency of nervous action in the production of secretion and its influence over nutrition, it remains to notice the operation of stimuli upon these processes by introduction into the circulation, and a direct conveyance to the substance of the tissues. The special action of certain substances upon the secreting organs is at the foundation of a large amount of medication which is employed. That stimulation can be directed upon the kidneys by the use of the terebinthinates, digitalis, squill, and other articles is not disputed, while a similar increase of activity can be generated in other organs, as the liver and the salivary glands, by the employment of articles which must be introduced into the circulation. In these cases from the occurrence of effects so uniformly, when the articles are exhibited which operate on these organs, as it were by preference, it is reasonable to suppose that there is an elective affinity between the articles and the cell tissue of the organs, and that as secretion as well as excretion are due to cell action, it is upon this that the force of stimuli is expended. Virchow admits the fact mentioned in the following statement:—

"Nearly everywhere do we find specific relations or affinities to exist. If we cast our eyes upon the glands, it is a well-known fact that there are specific substances, by which we are enabled to act upon one gland, and not upon another; to rouse the specific energy of one gland, while all the others remain unaffected. In the case of glands it is certainly much more difficult to exclude the influence of the nerves than in that of ciliated epithelium; still, certain experiments are recorded in which after the section of all the nerves, say of the liver (G. Hartung), it was found possible by means of the injection of irritating substances into the blood (these being such as experience had shown to bear some intimate relation to the organ) to provoke an increased secretion in the organ."

But many substances introduced into the circulation are not possessed of so definite determination; they are not simply foreign bodies, to be disposed of by the emunctories, but exercise a true nutritive office, and if not adding material to the composition of the tissues, at least promote the nutrient acts, or modify the nutritive conditions. The effects of such substances may be rapid and evanescent, or they may be permanent; ammonia and alcohol will produce the former, while the bitter tonics and preparations of iron will certainly, by continuance in small doses, add to the force and perfection of the nutritive operations; a more vigorous nutrition is promoted by their use, and in this light they become by assimilation a species of food for the tissues. That alcohol partakes of this character is evidenced in the greater production of fat, and even its embarrassing deposit in some particular organs, as the liver or kidneys, &c. What applies to the tissues generally is equally applicable to the nervous and vascular structures; they also in the same manner are constituted of cells, which with varying nutritive elements carry on the

interior acts of life which fit them for their functional office. While the introduced nutritive stimuli are operative on the tissues in the way that has been represented, they also maintain the nervous system, either in its centres or in its ramifications, as well as the bloodvessels, in a state most conducive to perform functional requirements. The cell activity of healthy grade promoted by stimuli, with full supply of nutritive material, is at the foundation of that vital energy which is characterized as tonic.

The phenomena which follow the application of stimuli are various, and in the endeavour to interpret them correctly, we must be directed by the light which physiological experiment has so far afforded us. The questions at issue are inseparably connected with the determination of the causes of these phenomena, the obscurity of which has led to the different expositions which have been given, which after all do not so much imply a disagreement with regard to facts, as a difference of the terms employed. One of the evidences of stimulation of a tissue is the contraction which takes place in it, and this is due either to reflex action by means of the nerves upon the capillary vessels, or to the existence of an inherent contractility in the tissue which is amenable to stimuli. As a consequence of such impression the part becomes pale and constricted; in the case of the skin the papillæ are elevated and the surface roughened, the blood is removed from the tissues, and an evident check is given to the nutritive processes. Heat or cold will produce constriction of the skin or other tissues of a vascular character, and this is followed by a reverse condition or expansion of the vessels, with an increase of coloration and of temperature, from which it is clear that a larger amount of blood has been determined to the part. If we adopt the purely nervous rationale of these effects of stimulation the active stage is that of contraction, and the passive one that of relaxation, precisely as in the experiments of Bernard and others, where stimulation of the sympathetic nerve was followed by contraction of the vessels and pallor of the ear of a rabbit, and division of the nerves by expansion of the vessels and increase of temperature. According to such hypothesis there is induced mere passivity of the vessels, when stimulation is followed by redness and heat. Still attributing the phenomena to purely nervous action, is the explanation to be given, predicated upon the idea that there are two sets of nerves in vascular tissues, and that upon the alternate play of these depend the contraction and relaxation, as in the case of the two nerves referred to of the submaxillary gland. This idea would be in accordance with the position that has been taken by some physiologists, that there is an active expansive power in the capillaries, which is in obedience to stimuli. Now if the blood had no other part to perform than mere passage through the vessels, in larger or smaller quantities in proportion to the facility of its flow, this mechanical explanation might be satisfactory, as vital contraction and expansion under the influence of nervous action would be all sufficient. But there are processes and operations to be accomplished in the tissues, which, although dependent on a due supply of blood, consist in the assimilation of its elements, and in elaborating compound materials for the especial use of the tissues; to use the expression, there are vital laboratory operations which are superadded to the capillary circulation, and these are the nutritive, formative, and reconstructive, which maintain the integrity of the tissues or replenish and repair them, and which must depend upon forces *sui generis*. In the present state of our knowledge it is impossible

to account for all the reactions which occur in the interstices of the tissues in connection with nutritive and formative acts, or to determine precisely either the molecular attractions which assume definite expression in the production of the compounds which enter into the composition of tissues, or the new affinities which arise in the waste of them. Yet it is apparent that such reactions and molecular attractions are under the influence of a principle that responds to the impression of stimulants, and that they may be increased or diminished, modified, or perverted, when stimulants are preternaturally brought into operation. Organic excitability, which found expression in the organic sensibility and contractility of Bichat, which for so long a time had been ignored by physiologists, has acquired new advocates in the supporters of cell doctrine. In normal life actions the source of stimulation is inherent in the tissues, is inseparable from vitality, and we may name the principle as we choose, excitability, impressibility, or sensibility. With this view of the case, the afflux of blood which follows the application of stimuli to a part may take place irrespective of the nervous system, as also may contraction.

A distinction is to be drawn between the effects of stimulants within the bounds of healthy action and their inordinate operation. There may be excitation of vital activity in a part accompanied with greater fulness of the vessels, with an increase of temperature and all the accompaniments of energy, without disturbance of any of the usual processes which are peculiar to the part, or there may be such modification of nutrition as to lead to an alteration in the structure and physical properties of the part, a positive damage to its constitution. Thus, in illustration, the glow which follows a cold bath, accompanied with heightened coloration of the skin and increase of temperature of the surface of the body, is natural, healthy, and tonic. It must be due, according to the view which has been taken of the operation of stimulants, not only to the impression made upon the extreme peripheral nerves, which is reflected back again to the capillaries, and which likewise arouses the central circulatory apparatus, but there must be an agency for the production of the result in the aroused activity of cell action. Precisely the same effects are induced by other stimulants, as friction, dry heat, or the articles employed to impart force to the local capillary circulation. If the explanation were correct that the nervous system alone is instrumental in such reactive manifestations, the conclusion is inevitable that they are owing to relaxation of the vessels, or to the play between antagonistic nerves, in which case there would be alternate pallor and redness. But the effect is uniform and persistent redness, and to all intents and purposes there is induced in the economy a tonic condition. It is a healthy excitement which is felt in the organs, and which as a therapeutic means is constantly resorted to, not only for the benefit of the part but of the whole system.

Stimulation, however, may be more intense than the production of simple reaction; there may be persistent slight tumefaction with heat and redness. In such case there will exist the parenchymatous exudation of Virchow, with cells unchanged, but fuller of fluid, and a clogged condition. The application of mustard plasters for sufficient time upon the skin, or the low grade of operation with cantharides, may be instanced as illustrative of such stimulation. From the effects just mentioned, which are passing and transitory, to the decidedly disturbing impressions upon nutrition, all grades of operation may be witnessed.

In accordance with the views of Dr. Anstie the genuine effects of stimulation are, 1st The relief of pain; 2d. Removal of muscular spasm, tremor, or convulsion; 3d. Reduction of undue frequency of the circulation; 4th. Reduction of excessive secretion; 5th. Removal of general debility or special fatigue of the muscles, brain, or digestive organs; 6th. Removal of delirium or maniacal excitement and production of healthy sleep; 7th. Support of the organism in the absence of ordinary food; 8th. Local increase of nutrition where this is deficient. It is remarked by him that the merit of perceiving that most of the above effects can be produced by stimulation better than by any other way, certainly belongs to Brown.

With reference to the relief of pain, there can be no doubt that stimulants are frequently successful. The cases to which this mode of treatment is applicable are asthenic, where, as in the instance of neuralgia, or even pain accompanying an acute disease of low type, the nutritive forces are below the natural standard, and where there is a feeble exercise of the blood-producing function and that fluid is in an impoverished state. Food under these circumstances is an essential element in the treatment, and when aided by such stimulants as alcohol, ammonia, the essential oils, and tonics, as the bitters, quinia, and the preparations of iron, is all potent. In regard to the substitution of the lower portion of the alimentary canal for the stomach in the administration of food, we can speak from experience in the most favourable terms, as upon several occasions it has been most satisfactorily adopted. When the stomach cannot be used, the injection of animal solutions into the bowels affords an excellent substitute for the ordinary mode of nourishment.

When small doses of opium or of chloroform are administered in such manner as to have an effect upon the nutritive processes, it is perfectly true that relief of pain may follow, as represented by the author; but we conceive that the doses mentioned of a grain or two of the crude opium, or one-fourth of a grain of a salt of morphia, would in this climate, in the large majority of individuals, prove the benumber of nerve action and so powerful a modifier of the nutritive operations as to become in the very sense that Dr. Anstie insists upon true narcotics. The accumulation of minute doses results in the same impression.

To define pain by language is an impossibility, and Sir W. Hamilton was as much at fault in this respect as the ordinary compiler of definitions, when he enunciated "that pleasure is the result of certain harmonious relations, of certain agreements; pain, on the contrary, the effect of certain inharmonious relations, of certain disagreements," a sentence that conveys no more idea of the nature of pain than the definition of a musical sound to a deaf mute. Sensibility and perception are involved in the production of pain, but it is distinct from mere pervertion of sensibility; and the idea of it cannot be entertained apart from the suffering entailed by it. The most that can be said in the premises is that a depressed and exhausted state of the vital energies, and a want of due supply of healthy nutritive blood for the maintenance of the organic processes, are predisposing causes of an attack of pain in some part or organ. Were the circumstances alluded to the immediate cause of pain, it ought to be universal and not solely confined to a particular nerve structure, which is no more in a depressed nutritive condition than the whole nerve-working apparatus. We are disposed, therefore, to believe that the fixation of pain is from local causes, and to adhere to the term irritation, indefinite

as it may be, for the state which is produced. Stimulants, by promoting healthy action, and tonics, with food, by repairing the waste of the tissues, may be regarded as the surest methods of permanent relief from pain in conditions of depression and exhaustion.

In connection with the removal of pain, the beneficial influence of diffusive excitement cannot be ignored, and this may be accomplished by the employment of the articles under consideration, either internally or externally, in the vicinity of or directly to the part affected.

It has long been understood that "muscular tremor, spasms, and convulsions" can be relieved by the exhibition of stimuli, and hence under the name of Antispasmodics many of them have been introduced as a class into the treatises upon therapeutics. The use of the term is in accordance with long usage and not from any acquiescence at the present time in the peculiar physiological or pathological doctrines from which it originated. It is generally assumed that convulsive movements arise from three causes — reflex action, excitement of the central masses in which resides motive energy, and a disturbance of these masses by influences which produce the effect of modifying, depressing, or suspending nutritive activity. To the latter alone must attention be directed in connection with the employment of stimulants.

It is an observation as old as Hippocrates that "spasm arises from repletion as well as inanition," but the latter fact has been greatly ignored by modern writers. In his "Treatise upon the Venom of the Viper," &c., 1781, Fontana has presented views bearing upon this source of convulsive movements which are worthy of citation at the present time. In connection with the mechanical philosophy which prevailed at the date given, it was supposed that convulsions proceeded from "caustic salts, whose invisible points pricked the nerves and irritated the muscular fibre." In combating this hypothesis, the language of Fontana is the following:—

"Convulsions are not always the effect of stimulus which irritates; they come rather from this, that the equilibrium between antagonistic muscles is broken. Animals that are weak and languid, and those which die from loss of blood, perish in horrible convulsions, and nevertheless there are neither pointed nor irritating salts. It is still more improper to attribute in these cases the convulsions to a superabundance of animal spirits; on the contrary, it would appear more reasonable to believe that there is a deficiency of them, or an irregular distribution of them to the muscles, or, to speak more correctly, it is to an irregularity in the circulation of the blood that convulsions owe their origin." "If opium causes convulsions it is because it destroys at different times and irregularly the irritability of muscular fibre. It is, moreover, certain that they are the weakest men and the most delicate women who are always most subject to convulsions, and it is not possible to suppose in these individuals a superabundance of animal spirits. It is known that all the muscles, even in relaxation, retain a certain tension in their fibres, which, when cut, invariably shorten and enlarge the wound. When a muscle is paralyzed it becomes elongated, and its antagonist still more is contracted, a fact which demonstrates that repose in muscles depends upon the equilibrium of forces between different muscles and between their different fibres. These forces, thus balanced, are lost and renewed at every moment without producing any movement or any visible change."

"But if the muscles do not receive the same quantity of fluid, or if this fluid arrives in them, or is distributed to them unequally, immediately the equilibrium of effort of the muscles is broken, those which receive the fluid enter into contraction, and hence the convulsions and violent throes which agitate the whole machine. Hence those who die of hemorrhage are affected with convulsions, as well as those who perish of poison. For it is certainly not probable that the loss of blood and the loss of force should be in equal proportion in each part, in each muscle, in each fibre, whilst the circulation itself is so unequal, and irrita-

bility does not cease to exist but in an irregular manner in muscles according to times and circumstances."[1]

In these most interesting hypothetical expositions of Fontana is presented the key-note which has helped observing practical pathologists to their conclusions with respect to the conditions of the nervous system which are conducive to convulsive manifestations in the muscular system. For animal spirits, nervous power has been substituted, and the truth has become as clear as any axiom in science, that whatever has the effect of exhausting energy and of interfering with its regular distribution, will contribute to the ready occurrence of convulsive movements. The experiment of Sir Astley Cooper, in this connection, is highly instructive.[2] He tied both carotid arteries in a dog, and compressed the vertebral trunks, when with insensibility convulsions were induced, exhibiting, as Dr. Carpenter remarks, that "the functions of the spinal cord were not suspended but only deranged." It is remarked by Dr. Marshall Hall that "convulsion from loss of blood constitutes one species of puerperal convulsion, and should be accurately distinguished from other forms of this affection arising from intestinal or uterine irritation and an immediate disease of the head."[3] Such teaching was not in vogue at the time he wrote his treatise on the morbid effects of loss of blood, and hence some of the most eminent practitioners were in the habit of bleeding, where loss of blood was the occasion of the trouble. In that form of convulsions attending parturition, preceded by free discharge of albumen from the kidneys and dropsy, it has been the endeavour to ascertain the toxic element of the urine, which by its action upon the cerebral spinal centres is the immediate cause of the convulsive movement. It is by some supposed to be urea (hence uremic intoxication), and by Frerichs to be the carbonate of ammonia formed from it; but the exhaustive process of the discharge of albumen, the very basis of blood formation, has been overlooked, and the fact not considered that by a hemorrhage, as albuminuria to all intents and purposes is, the nervous system is slowly deprived of its normal and sufficient source of nourishment. To this circumstance may be attributed the condition of the nerve centres, which has been termed *convulsibility* (the convulsive tendency), and which only requires the exciting influence of reflex action to call it into operation; or the explanation given by Fontana may be correct, the abstraction of nerve controlling force, by which the equilibrium of muscular tension is maintained, and the abandonment of the muscles to their own inherent contractility. The employment of stimulants, as ether or chloroform, in these cases of exhaustion is productive of salutary results by sustaining the nervous system to the point of its normal functional activity. In such condition the use of stimulant tonics and food becomes the rational method of treatment. In the treatment of epilepsy Dr. Anstie speaks in favourable terms of the use of chloroform in small stimulating doses, or of hot brandy and water, or alcohol in some form, at the time of threatened attack. Carbonate of ammonia has been used by Dr. Reynolds.

The "reduction of unduly frequent circulation" is an important effect of stimulants in certain conditions of the economy. Indeed, in these cases, they are the only remedies which are effective in bringing the circulation to the normal standard. As remarked by Dr. Anstie, "so well known is

[1] Vol. i. p. 9.

[2] Guy's Hospital Reports, vol. i. Carpenter: Principles of Human and Comparative Physiology, p. 352, Amer. ed.

[3] Researches on Loss of Blood.

this effect, that a certain degree of frequency of pulse, varying somewhat according to the observed type of the disease, is very commonly taken as the best indication of the necessity of administering stimulants." The recognition of this fact has been of infinite service to practical medicine, for by the older practitioners no more grievous error was committed than that of supposing in diseases connected with inflammation of organs, a rapid pulse was indicative of the necessity of continuing evacuant treatment, and that inflammation itself was to be treated, to the very end, favourably or unfavourably, by antiphlogistic measures, irrespective of the condition of the general system, and without the idea that in the very reactive phenomena which were presented was the evidence of an exhausted condition of the nervous system. We are indebted to the observations of pathologists and therapeutists of the last thirty-five years for the thread of the labyrinth through which the older practitioners wandered in hopelessness of extrication. To Travers, Gooch, and Marshall Hall are we indebted for the demonstration that the same apparent symptoms are to be met with both in sthenic and asthenic diseases. Such diseases had previously been recognized and studied in their separate states, and had distinct locations in the nosological arrangements, but were not understood in their similarity of manifestation. Call it by what name we may, constitutional irritation, or reaction from exhaustion, the profession is now alive to the fact that all cases of excitement are not to be controlled by the same remedies, and that in the large majority of them the employment of stimulants is the only security for the patient. Every good practitioner must indorse the language of Dr. Anstie with reference to the use of stimulants under circumstances of excitement, to wit: "Here again it is by no means desirable to drench the patient with a large dose; the object should be to administer small quantities at short intervals. For to narcotize a fever patient is a most serious and dangerous step, and the well-meant zeal of those who have desired to procure sleep has often induced coma from which the patient has only recovered to collapse and quickly sink."

The reduction of excessive secretion can be brought about by stimulation. Where inordinate secretion is the result of laxity or feebleness of organic structure, giving rise to exudation or physical exosmosis, stimulants, either locally applied or used internally, to effect a general alteration of nutrition, will be found most efficacious.

There are other morbid states referred to by Dr. Anstie in which stimulants are the most effective therapeutic measures. "The removal of delirium and of maniacal excitement, and the production of healthy sleep where it has been morbidly absent, is an effect of stimuli, which, according to the old ideas of stimulus, would surely have been unreasonable and impossible, and yet it is really one of the most characteristic effects which these agents are capable of producing." The occurrence of delirium or of mania in an exhausted state of the system is now recognized as mere representations of such condition; they are the legitimate symptoms of exhausted nutrition in the brain, and can be produced by any cause which tends to pervert this nutrition, either mental or physical. The overworking of the brain, or starvation, or reduction of the elements of the blood from poisonous substances, will equally proclaim how deeply the nutritive molecular operations of the cerebral substance have been altered. With regard to *sleep*, what Dr. Anstie says is too important to be presented in other words than his own.

"That the brain does become depressed, to a certain extent, during

sleep, in as far as this may be judged from its being in a state of *anæmia* or bloodlessness, as compared with its condition in waking moments, is rendered probable by the recent researches of Mr. Durham.[1] But it is certain that there is a more extreme degree of anæmia of the brain, which is absolutely incompatible with sleep of a natural and healthy kind." "It appears as desirable to take as our starting-point the physiology of natural sleep, in order to explain the kind of stimulant action with which we are at present concerned. Natural sleep is that repose of the brain which, in a healthy state of the organism and in the absence of natural hindrance, follows the performance of a certain amount of bodily labour, which has exhausted the nervous system to a certain extent. We may suppose, if we please (with Dr. Durham), that the results of the chemical changes in the nervous matter which necessarily accompany the action of the brain—the *debris*, so to speak—have impeded the continuance of the action by which they were produced, and that a state of comparative anæmia follows, during which the brain is allowed time to repair itself, as we know that it certainly does. Provided that this process of repair can go on properly, sleep is uninterrupted; not that it is a uniform state, on the contrary, as Sir Henry Holland justly observes, 'it is a series of fluctuating conditions, of which no two moments perhaps are strictly alike;' the varieties extending 'from complete wakefulness to the most perfect sleep of which we have cognizance from outward or from inward signs.' It is a state which, as it seems to me, we may best express by supposing the mind to be in perfect vigour, but united to a corporeal instrument, whose efficiency is constantly fluctuating, in correspondence with the interstitial changes by which it is slowly being repaired, but with a steady progress, on the whole, towards recovery."

Where sleep is impossible, or banished by wakeful delirium, it is clear that food aided by stimulants constitutes the necessary means of restitution from the perverted state of nutrition here referred to.

Dr. Anstie's seventh proposition, that "the support of the organism, in the absence of ordinary food, by stimulants, is one of the most remarkable phenomena which can be offered to the attention of the physiologist," is supported by references to the testimony which is given of the wonderful effects of coca and of opium, as well as the sustaining effects of tobacco and alcohol under the exhausting tendency of labour and exertion. The question with respect to these artificial stimulants being of advantage or injury, is one upon which the most astute physiologists have differed. Even under the admission that purely stimulating doses are advantageous, the difficulty of restraint within these bounds is so great that the line of demarcation between useful stimulants and dangerous narcotics is but imaginary. To what extent they may be made *food* under ordinary circumstances, or are transformed into *poison*, has not hitherto been accurately determined. With respect to alcohol, Dr. Anstie regards it as food when employed under the restrictions of pure stimulation, and in this he is in direct opposition to Dr. Carpenter, who regards the operation of alcohol as not subservient to the nutrition of the tissues, but a stimulus, increasing for a time, like other stimuli, the vital activity of the body, but followed by a corresponding depression of power. We are inclined to the belief that, upon a review of all the arguments, the position of the latter authority is most tenable. The use and the abuse of alcohol is too prolific a theme for present discussion.

[1] On Physiology of Sleep, Guy's Hospital Reports, 1860.

The last proposition to which attention will be directed refers to the idea that stimulation is invariably followed by depression. The use of the term reaction in the very reverse sense of that which we are in the habit of attaching to it, we agree with Dr. Anstie in considering erroneous. In depressed states of the system, when stimulants are used, and a favourable impression is made by them, instead of depression, a normal condition is brought about, and this, in ordinary parlance, is called reaction. It is well known to the physician and the surgeon, after the invasion of disease or the occurrence of an accident. But the depression from the use of stimulants, a subsidence of activity, upon no ground whatever can be called reaction; it is depression from some cause inherent in the economy, and with reference to this cause is the issue made between our author and the physiological and therapeutical writers most in estimation.

Dr. Carpenter asserts that "the influence of excitants, repeatedly and powerfully applied to the nervous tissue, is undoubtedly (as in the case of muscle) to weaken, and at last exhaust, its power of responding to them; this is seen alike in experimental researches and in the ordinary course of vital action. The excitability thus exhausted can only be regained by an interval of repose during which the nutritive operations may restore the tissue to its pristine integrity, and thus prepare it for renewed activity."[1] Upon turning to the pages of Muller,[2] we find the following statement: "The action of an organ being excited by stimulants, and every increase of action without simultaneous increase of organic force being attended with exhaustion of this force, stimulants themselves must exhaust, or, as it were, consume the organic power; and unless, like the general *vital stimuli*, they have at the same time a restorative action, a temporary cessation of the action they have themselves excited will follow, although their influence be continued." The belief thus enunciated rests further upon the ground that nerves and muscles, when stimulated by galvanism, by mechanical or other agents, lose their capability of excitation, and require repose before the same phenomena of vital activity can be brought about. Convulsions are suspended from exhaustion of the excitability, either in nervous trunks, or more probably in the muscular fibres, and we have seen temporary paralysis of one side to follow convulsions confined to that side, which by a few hours' rest was completely removed. It is admitted by Virchow that "in all parts certain states of fatigue manifest themselves, states during which the part is no longer able to originate the same amount of movement that up to that time could be perceived in it;" but while Dr. Carpenter attributes the restoration of excitability and removal of depression to the renovation of nutrition, Virchow assumes that "in order that they may again become competent to perform these functions, these parts by no means always require a new supply of nutriment, a fresh absorption of nutritive material; rest alone is sufficient to enable them to resume their activity in a short space of time." To the doctrine of depression following stimulation, exception is taken by Dr. Anstie. He asserts directly that "it is not true that stimulation is of itself provocative of subsequent depression;" and further states: "We often hear the effects of strong irritation of the skin or the mucous surfaces quoted as an example of the way in which action and reaction follow each other. The immediate effect of such treatment (it is said) is to quicken the circulation and improve the vital condition of the part; but its ultimate result is a complete stagnation of the vital activities in the

[1] Carpenter's Principles, p. 382. [2] Elements of Physiol., vol. i. p. 59.

irritated tissues. The real explanation of the matter is, however, very different from this. Mild stimulation of the skin (as by friction, warm liniments, &c.) has no tendency to produce subsequent depression, nor has mild stimulation of the mucous membranes (as the mustard we eat with our roast-beef). But the application of an irritant strong enough to produce a morbid depression at all, produces it from the first." According to him, "a stimulus promotes or restores some natural action, and is no more liable to be followed by morbid depression than is the revivifying influence of food."

There can be no doubt, that where stimulants are used in sufficient quantity to perturb nutrition, that proportionate to this disturbance will be inability to maintain the usual functional or organic operations of the organs or tissues; and that the vital processes may be disorganized from the first impression. The mode of operation, however, is not stimulative, it is narcotic.

But where stimulants exercise their legitimate mode of operation, by maintaining activity of the functional and nutritive acts, can this effect be sustained indefinitely without depression? The nutritive acts are dependent upon stimuli, with a capability of responding to these stimuli in the interstices of the tissues. With the supply of material in the shape of food, the molecular movements go on uniformly, with all the changes necessary for repair and waste. The distribution of nervous force and of capillary circulation are, as has been shown at a preceding page, internally connected with nutrition. Stimuli occasion action and not power; where they produce the latter it is by an improvement of nutrition, and this requires accessory materials. Now, whether nutrition depends upon the mere play of physical forces, or is maintained by them in connection with vital susceptibility, as the production of action is the effect of stimuli, it follows that mere action, without the due supply of materials for assimilation, must ultimately result in waste of tissue and corresponding exhaustion of vital force.

The term excitability of a part is the mere expression of a capability in that part of responding to impressions, and exhaustion of the excitability only means that the capability is lost, so far as can be judged from outward manifestations, and as has been seen, if stimuli occasion action without recuperation by the supply of requisite materials for nutrition of a tissue, it is a mere choice of words to express a result—exhaustion of excitability or damage to nutritive operations. As excitability is dependent on proper nutrition of a tissue, the operation upon it by stimuli, by the very waste of materials, is an exhaustion of the excitability. The continuance of application of unusual stimulants, for a long period, to the tissues or to the system generally, even in small quantities, which at first do not produce disorganizing effects, are calculated to exhaust the vital operations, and ultimately terminate in depression. In the light in which we have viewed the subject, it would appear that the views of Dr. Anstie and of the physiologists mentioned, are not so far removed from each other as might at first sight be supposed.

In the preceding exposition we have endeavoured to present the account of the views which are entertained at the present time by eminent physiologists, with respect to the operation of stimulants, and are greatly indebted to Dr. Anstie's book for clear statements and reasoning upon this interesting subject. His opinions are well illustrated and sustained by ingenious reasoning, yet are open to criticism and objections, and, as

has been shown, some of his statements are in opposition to the views of the deepest thinkers in the profession.

The other class to which Dr. Anstie's work is devoted is that of *Narcotics.* After presenting the views of the ancients with regard to the substances which may be included under the head of narcotics, and exhibiting that a great degree of confusion existed with regard to the effects of articles and a confounding of many entirely dissimilar, Dr. Anstie remarks that it is time to restore the word narcotism to its true and original signification; "for, in the present state of our knowledge, we shall hardly find a better definition of narcotics than that of *deadening agents, which diminish the activity of the nervous system.*" The word ναρκωτικος was coined by Galen (whence our narcotic) to signify an agent which acts "by extinguishing or repelling the native heat and animal spirit, without which feeling is impossible."

Dr. Anstie does not admit the propriety of separating, as is now usually done, *narcotics* from *sedatives.*

"The one difference which would seem to stand out at all prominently as a distinctive mark, separating sedatives from narcotics, is the sudden and *shock*-like manner in which the former depress the system when given in a very considerable dose. Prussic acid and tobacco might be taken as typical examples of agents which are capable of occasionally producing this sort of effect, but neither of these substances is devoid of the power of stimulation when administered at a proper time and in a suitable dose. And, on the other hand, it is certain that opium, which was selected by Brown as the most perfect example of a diffusible stimulant, has not unfrequently produced precisely that sudden depression which should result only from the action of a sedative."

There are two ways in which an impression is made upon the heart by narcotics: 1. By a depressing influence on the brain of such an overwhelming character as to resemble the violence inflicted by a blow which completely crushes the head; and 2. By the rapid production of a change in the organic nerves of the heart itself through the direct action of poisoning blood upon them.

All physiological and pathological observation has taught us that narcosis is a condition in which the nervous system is especially involved, and that the phenomena presented largely represent the suspension of activity of this system. This must be accomplished in two ways—by an introduction of a narcotic into the circulation, and "the agency of a poisoned blood supply" upon the central nervous masses, and the interruption of their vital functional activity, whereby perceptive capability and motive power, for reflex purposes, are interfered with; or, 2dly, by a local interruption of conducting power in nervous-cords, by which a severance is made in the communication between organs and their regulating centres. Narcosis, therefore, "is in fact a more or less complete paralysis of the nervous system." If the brain and nerve centres are in this state of complete or partial paralysis, the mandates of the will or even the response to the calls for aid in the performance of functional acts in the organs cannot be given, while if the peripheral termination of the nerves or the communicating cords are in a benumbed or anæsthetic state, a perfect isolation of organs or tissues is effected. The state which is then presented is a *negative* one, and is entirely in opposition to that of stimulation, which is *positive.* If stimulation is active, narcosis is passive, and herein resides the difference between the two in their manifestations. Stimulation may proceed from the nerve centres to the organs under their control, or it may be brought about by the im-

pression upon the peripheral sensitive nerves and be reflected; while, although nerve influence may be abstracted from the organs by the obliteration of nervous activity in the centres by narcotics, the local application of the latter being confined in its effects to the part to which it is applied, will not be followed by an influence on other parts or organs. The local benumbing or paralyzing effect is passive, and passive effects are not communicated by nervous transmission. We can from this understand that a local anæsthetic effect can be produced without involving other parts or organs than the one affected.

While narcotics interrupt vital actions in the brain and spinal marrow, in the ganglions or the nerves by the damage which is done to the nutritive operations, the effect upon the same operations in the tissues themselves must not be overlooked. If the doctrine of independent cell activity be admitted, whether narcotics act upon the vital excitability or upon the mere operation of physical forces, there is a broad field of conjecture and of research. That nutrition in the tissues is modified by sedative poisons, has been demonstrated by the experiments of Drs. Hammond and Mitchell, published in this *Journal*, July, 1859. The articles introduced into the circulation were Caraval and Vao, two varieties of the poisons of the South American Indians. "It was found that the motion of the heart was *primarily* checked from the introduction of these substances into the circulation, and that there followed upon it paralysis of the limbs and loss of voluntary motion, but reflex action remaining for some little time afterwards." By preventing the agents from entering a limb its full excitability was maintained. It may be argued with respect to like poisons that as the deadening of the heart takes place in a short period, it affords evidence of the capability of the poison to forcibly act upon the muscular tissue, and that while entering the heart and being distributed through its interstitial structure, a certain amount is carried to the brain and spinal marrow, and also to the remote muscles. But as the heart speedily ceases to act, the full dose cannot be driven into other organs and portions of the body, and consequently entire loss of vitality is delayed until the complete effects of deprivation of blood or its perversion, as is manifest in these cases, are felt in every tissue.

Although Dr. Anstie has put his case in plausible language, we do not think that the medical world are sufficiently advanced in a knowledge of the intimate causes of vital actions to do away with the general terms of sedatives and sedation any more than to dispense with those of stimulants and stimulation. The phenomena connected with narcosis are to be studied with reference to the nervous system of relation and the organic system. At the head of the list of effects upon the first named system are those upon the brain. Dr. Anstie regards the symptoms which have been looked upon as indicating excitement in connection with intoxication to really mean narcosis, which he illustrates by a detail of cases, and by reference to what may be termed the literature of drunkenness. The commencing conditions are connected with loss of the reasoning faculty, and the termination, partial or total loss of consciousness, intermediate to which are diminution of the moral sense, of the power of voluntary recollection, prominence of the emotional and appetitive instincts, and delirium, involuntary memory, and involuntary fancy.

The disturbances of sensibility include delusive feelings of heat or cold, partial numbness, formication, painful tingling or actual continuous pain, indistinctness of the sense of touch, perversions of the other special

senses, actual paralysis of common sensation, in most instances commencing with the posterior (lower) extremities.

The muscular affections include chronic convulsions, tremor and shudderings, spasm, tetanic convulsions, catalepsy, and motor paralysis. The changes in the pupil would come under this category.

The alterations of respiration include undue frequency, undue slowness, gasping, sighing, labouring, or spasmodic respiration.

The symptoms which concern the organic system are connected with the heart, with too great frequency and abnormal feebleness, undue frequency with undue force, undue slowness with abnormal feebleness, irregular rhythm with abnormal feebleness.

And, what more particularly concerns the nutritive processes, disturbance of secretion.

In the preceding review we have so far exceeded the bounds originally proposed that we cannot go into an illustration of the various points above enumerated; the reader is referred to the book which has been taken as the heading of this article for full details upon each one of them. The prominent end we have had in view, in connection with the exposition of Dr. Anstie's views, is a statement of the opinions entertained among physiologists with regard to the interesting and important subject of stimulation and sedation. We must here close the discussion.

Connected with this treatise are several essays detailing the results of experimental inquiry with respect the action of special stimulants and narcotics. To do justice to these would require as much space as has been already occupied, and they can only be adverted to as important and extremely interesting. J. C.

ART. XIX.—*Laryngoscopy.*

1. *The Use of the Laryngoscope in Diseases of the Throat, with an Appendix on Rhinoscopy.* By MORELL MACKENZIE, M. D., etc. Philadelphia: Lindsay and Blakiston, 1865. 8vo. pp. 160.
2. *Rhinoscopy and Laryngoscopy, their Value in Practical Medicine.* By Dr. FRIEDRICH SEMELEDER, Physician in Ordinary to His Majesty the Emperor of Mexico, etc. Translated from the German by Edward T. Caswell, M. D. With wood-cuts and two chromolithographic plates. New York: William Wood & Co., 1866 8vo. pp. 191.
3. *Die Inhalations-Therapie in Krankheiten der Respirations-Organe mit besonderer Berücksichtigung der durch das Laryngoscop ermittelten Krankheiten des Kehlkopfs.* Von Dr. GEORGE LEWIN, dirigirendem Arzte in der Königlichen Charité ad interim, etc. Mit 25 Holzschnitten. Zweite vermehrte und verbesserte Auflage. Berlin: Hirschwald, 1865. 8vo. pp. 506.

   Inhalation Treatment of Diseases of the Respiratory Organs, with Special Reference to the Diseases of the Larynx as made known by the Laryngoscope. By Dr. GEORGE LEWIN, Attending Physician to the Royal Charité ad interim. With 25 wood-cuts. Second enlarged and improved edition.

WE have placed these titles at the head of our article, not with the intention of reviewing the individual works, but rather as a text for the consideration of laryngoscopy from a practical point of view, both as to

its aims and to what it has accomplished. But a short time ago, Gibbs's work, reviewed in a former number of this journal, was the only one that our language could boast of. We now have four or five publications by English laryngoscopists and one translation. Our journals now frequently contain notes of cases in which the laryngoscope has been employed, and we think the tendency is to acknowledge the great benefit which has accrued to medical science from its introduction. Its legitimate position is recognized, and its claims undeniable. Notwithstanding Dr. Watson's opinion in the *Lancet* for October, 1865, we maintain that the laryngoscope does reveal to us many facts which we could never know, *ante mortem*, without it. Any one who is familiar with the use of the instrument, and who has had opportunities of observation, will recall numbers of cases in which it was impossible to have formed any definite idea of the existing conditions without the aid of this instrument. Who would arrive at the diagnosis of a laryngeal polypus, of laryngeal tumours in their initial condition, of malformations, or of paralytic conditions of the chords, without this instrument? And who too may not be misled in cases of aphonia, and infer the existence of organic and structural changes, where the laryngoscope would reveal to him the normal condition of the vocal organs? There is then something positive in the information we derive from its use; there is an undeniable benefit which it confers upon us. It shows us directly what would be but inference without its aid. Then again, as Dr. Watson admits, it certainly is a valuable aid in confirming our diagnosis in other cases where we have been able to arrive at a pretty definite conclusion without it, but still not so definite as when it is brought under our own eyes. Its mission here is merely to confirm, and is therefore secondary to the one which we have mentioned, that of giving positive knowledge which could be gained in no other way. Its third sphere of usefulness is in the facility it affords of making local applications and of applying surgical treatment to the larynx. That there is ground for the opinion that the laryngoscope may lead to too frequent and to unwise surgical interference must of course be admitted, but it seems to us by no means probable. It is with it as with every other instrument; in the hands of prudent, enlightened men, it is a source of great instruction, an agent of great importance; in the hands of ignorant, fanatical men, it may become the cause of much injury. Dr. Watson's holy horror at the use of cutting instruments, within the cavity of the larynx, is rather surprising in the face of the scores of cases now recorded, where polypi and other tumours have been thus removed, and where entire recovery has rewarded the skill and patience of the laryngoscopist.

Mackenzie has given the most complete history of the laryngoscope that has yet appeared. Although laryngoscopy is considered a new branch of medical science, yet the first attempts at an examination of the throat and air-passages, worthy of the name, were made more than fifty years since by an Italian named Bozzini. It was not, however, until thirty years thereafter that any definite and decisive result was reached, and then it was due to Dr. Babington, of England. He seems to have been the first who really used this method of exploration, but his instruments were clumsy, his mode of conducting the examination unsatisfactory, and his observations were never recorded. Subsequent to that period numerous attempts were made at different times in England, France, Italy, and even in America, to gain a view of the interior of the larynx. Mr. Liston seems to have been successful in exhibiting the parts above the vocal chords, that is, the *aditus laryngis*. Garcia, the celebrated vocalist, was led from

curiosity to devote much attention to the subject, and he applied himself with great zeal to the study of his own vocal organs; he, however, limited himself to the study of *auto-laryngoscopy*, being the first who had ever practised it. In this country, so far as we are aware, the only attempt to explore the regions beyond our natural observation, previous to the introduction of the laryngoscope as it now is, was made by Dr. Cutter, of Woburn: he devised a sort of speculum, curved and furnished with a prism, by which he hoped to accomplish the object, but the attempt was unsuccessful. It was left for Czermak, then Professor in the University of Pesth, to utilize all the experiences of others, and produce the perfect instrument as we now have it.

Let us see what the instrument is, and what it is to accomplish. In order to "look round the corner," as one of the old writers expresses himself, it is only necessary to have a mirror so placed that it shall command the view round the corner, and to throw light upon that mirror. The corner that we have to look round is the epiglottis and the base of the tongue. The axis of the larynx and trachea is not at right angles with the horizontal plane of the mouth, but inclined so that it forms with that plane anteriorly an acute angle. To gain a view therefore of this axis and of all that lies around it, we must hold the mirror perpendicular to it. It is by the simple law of optics—the angle of incidence is equal to the angle of reflection—that we are enabled to accomplish our object. But now how are we to throw light enough upon the mirror to illuminate the dark passage? Czermak's predecessors had all availed themselves of either direct or reflected sunlight. Either of these is, of course, ample for all purposes of observation; but if direct sunlight is used, it can be only when the sun is so near the horizon that the rays of light shall fall directly upon the mirror held in the pharynx. Whether we employ the reflected or the direct ray, all our observations are subject to the chance of the passing cloud, and fair weather alone would be propitious to our investigations. By a happy thought Czermak determined to employ artificial light, and by means of a concave reflector to throw such a cone of light upon the mirror as should be sufficient at all times to illuminate the larynx. Thus by introducing mirrors of a more convenient size, shape, and mounting, and by applying artificial light, he made laryngoscopy valuable at all times and seasons. But this was but the beginning of his work. Starting from this point with the most indefatigable perseverance, and the most admirable skill, he devoted himself first to the study of his own vocal organs, and then to those of others. He worked out the whole anatomy and physiology of the larynx, as it had never been done before; he studied its pathological conditions, and led the way in those investigations, which a few have zealously followed with admirable results.

From what has been said it is evident that the three elements of a laryngoscopic examination, as now generally conducted, are the mirror in the throat, the reflector, and the light. In all these points simplicity should be aimed at; the more complicated an apparatus, the more difficult it is in itself to manipulate, and the more certain is it that but few will endeavour to use it. Hence for the light almost any lamp of sufficient size, that will give a clear, steady flame, will answer. A movable gas light, furnished with an argand burner, and strengthened by a glass reflector, affords a most excellent light. Störk, of Vienna, has used glass globes as reflectors, but the glass reflectors spoken of have acquired quite a reputation abroad, and are known as the American reflector. The concave re-

flector used in the examination has a diameter of three-quarters of an inch and a focus of eight-tenths of an inch. It is also perforated in the centre, so that the eye can gain the full force of the reflected cone of rays. The mode of using this reflector has been various. Czermak himself has it fastened to an upright metallic staff, which is fitted to a horizontal wooden handle, and this he holds between his teeth. Semeleder has attached it to a spectacle frame by a universal joint upon the bridge. It has also been applied to Cramer's forehead band, and when thus used it may or may not be perforated, according as it is intended to be used upon the forehead alone, or upon the forehead or over the eye. When used upon the forehead it is open to the objection that the light falls upon the mirror in the pharynx at a different angle from that at which the observer's eye is placed. Tobold has applied it to the end of a jointed bracket, which is attached to the standard of the lamp, and to the latter he has added a system of lenses for the purpose of concentrating the light. The third factor in the examination is the pharyngeal mirror; these may be round, ovoidal, square, or rectangular, and may be of glass or steel. For ordinary purposes the round ones are the best, and those of glass are preferable to those of steel. Whichever may be used, a variety of sizes will be necessary, ranging from half an inch to an inch in diameter. They are plane mirrors, attached at an angle to a metallic stem, which is fastened into a wooden handle by a screw.

If now we wish to make an examination, we must seat our patient at a table with the light on a level with his mouth, and a little behind him. It is better for the observer to sit upon a low stool, so that his eye will be at the height of his patient's mouth. Many of the writers lay no stress upon this point, but we think it will be found to facilitate the examination. The reflecting mirror must then be adjusted, so that it will throw the light upon the patient's mouth. In order to let the light fall upon the mirror in the pharynx, and from thence into the larynx, the patient's tongue must be kept protruded, and for this purpose it is only necessary that it should be slightly held in a napkin by his own finger and thumb, or by the observer's. All the instruments that have been devised for holding the tongue, &c. &c., such as tongue depressors, self-holders, epiglottic pincettes, and head rests, are needless accessories, inasmuch as while they tend to intimidate the patient, the result gained by them may generally be obtained by training. The small mirror must then be introduced, but it must previously be warmed in order to avoid the effect of the vapour upon its reflecting surface; the handle of the mirror should very nearly correspond with the angle of the mouth. The mirror should be introduced as quickly as possible, passed under the uvula, and carried back to the wall of the pharynx, thus causing the least amount of irritation. During the examination the uvula lies upon the back of the mirror, which should be held at an angle of about 45° with the horizon. Care must also be taken in introducing the mirror, that its reflecting surface is not brought in contact with the tongue. Such is the manipulation, but simple as it seems, it is in many cases very difficult to accomplish. According to Dr. Semeleder's experience about five in a hundred are by nature incapable of being examined; with about twenty-five in the same number the examination succeeds at the first attempt, and in the remainder it will be successful after a few trials.

Let us, however, consider what are the chief obstacles to a successful examination. Of course the age of the patient is important. With children it is very difficult to accomplish even after long practice. But aside

from the fact of age, we find other and oftentimes serious impediments in our way. In the first place, the body of the tongue itself sometimes presents the greatest obstacle. Even when it is drawn out of the mouth, it will still rise up in the middle to such a degree as to entirely cut off from view the soft palate. A case came under our eyes quite recently in which it was utterly impossible to gain a glance at the mirror, so prominent was the tongue. This circumstance cannot be overcome by the use of the spatula, for that would press the root of the tongue down upon the epiglottis and thus close the very channel which we are trying to expose. The only method of overcoming it is to train the patient by a sort of lingual gymnastics to press the tongue down at the same time that it is pushed forward. Many auto-laryngoscopists acquire this muscular control to such a degree that they do not protrude the tongue at all, but keep it pressed forwards and downwards in such a manner that the entire channel is exposed. The next difficulty is the extreme sensitiveness of the uvula and soft palate. This, as has been said, may be overcome by practice, or, in very extreme cases, it may be in a measure overcome by the use of local anæsthetics, such as ice and solutions of chloroform and glycerine, or morphia and glycerine. Having accomplished this much, we may still be baffled in our efforts by the angle at which the mirror is attached to the stem. This stem is in a measure flexible, and can therefore be accommodated to such variations. But a more serious obstacle is that of the pendency of the epiglottis. This is by no means a frequent occurrence, but still one that sometimes meets us. From some cause, whether as congenital peculiarity, or as the result of a developed laxity of the fibres, the epiglottis, instead of standing erect, is so far inclined over as to cut off, more or less completely, the view of the larynx, and in some cases to render the examination entirely impossible. We have met with one instance of this kind, where the epiglottis was so low that no view of the vocal chords could be obtained.

Having thus given a sketch of the instrument and the method of conducting the examination, let us look one moment at the image reflected in the mirror. In the first place we have the whole of the back portion of the tongue with its papillæ, and its ligamentous attachments to the epiglottis, with the spaces between them. We then see the free edge, and a portion of the posterior surface of the epiglottis. On either side are the spaces between the larynx and the lateral walls of the pharynx. Then looking into the larynx we have the mucous folds that connect the epiglottis with the arytenoid cartilages, and covering the small cartilages of Santorini and Wrisberg. Then we see the arytenoid cartilages with their processes, which give attachment to the vocal chords, and the mucous bands, which connect these two cartilages. We have the mucous chords, falsely denominated superior vocal chords, falsely because they take no part in the formation of the voice, and hence are in no sense vocal chords. The name of ventricular chords seems to us preferable. Below these we see the ventricles of the larynx, and then the true vocal chords.

We would especially draw the reader's attention to the action of these chords, a phenomenon which was never witnessed until Garcia made his experiments, and never clearly understood until Czermak prosecuted his researches. In all ordinary quiet respiration these chords move backwards and forwards towards the middle line. In utterance the posterior extremities are closely approximated by the turning movement of the arytenoid cartilages, and drawn towards each other in their whole length, a little

chink only being left midway. In the production of an ordinary musical sound this chink seems like a longitudinal slit; but if a falsetto tone is made, the chink assumes an elliptical shape. Nothing can be more interesting than the first view one has of this phenomenon, and of the mechanism of the human voice.

But to return to the parts exposed to our view. We have said that a portion of the posterior surface of the epiglottis is visible. When, however, a very high note is forcibly struck and held, the epiglottis is thrown upwards more than it is ordinarily, and a still larger portion of the same surface is exposed, with a protuberance, which was not known until the days of laryngoscopy. Mackenzie designates it as the tubercle of the epiglottis. It is a sort of cushion which fits down into the top of the glottis, and renders it more perfectly tight in the movements of swallowing. Below this we can see the anterior attachment of the vocal chords, a portion of the anterior wall of the thyroid cartilage, the anterior portion of the crico-thyroid ligament, the anterior wall of the cricoid cartilage, and then a greater or lesser number of tracheal rings in their anterior portion with the connecting ligaments. Some have succeeded in seeing down to the bifurcation of the bronchi, but it is only under highly favourable circumstances that this can be accomplished.

Such is the field of view that is exposed, not that every one could see all that has been named, nor that any would be likely to see it all the first, or the second, or the third time that he made use of the instrument. For it does require long continued practice, and we are not all gifted with the same amount of skill and dexterity. Nor can all this be seen by one position of the mirror, but a change of position will bring it all into the field of vision.

The first requisite is to get the manipulation of the instruments, and this may be gained by practice upon the phantom or upon such individuals as will submit themselves to the examination. The second, is to learn what it is that is seen in the mirror—to train the eye. When one first looks into the ophthalmoscope, the fundus of the eye seems naught but a red ball, and it is only after repeated trials that one is enabled to discover the papilla optici, with its arteries and veins, the macula lutea, and the vessels of the choroid; so is it in a measure with the laryngoscope. Let no one, therefore, be disheartened if his earliest efforts fail to show him anything that he can recognize.

The best and most ready way of becoming acquainted with the field of observation, is to experiment upon one's self, to practise auto-laryngoscopy. For this purpose it is only necessary to have a plane mirror—an ordinary toilet mirror, or even a piece of looking-glass—held before the face, with the light arranged so as to fall upon the mirror held in the mouth. Or if the concave reflector is used, let the light be thrown from that upon the mouth of the observer's own image just as it would be thrown upon the mouth of a patient. The writer has been in the habit of using the apparatus which Czermak devised for this purpose, and with it he has been more than satisfied. It consists of a horizontal brass rod to which an upright rod is attached bearing a concave reflector, similar to the one already mentioned. This reflector is perforated so that a second observer can make the examination at the same time, thus combining demonstration with auto-laryngoscopy. Another upright rod, in front of the one mentioned, has a small plane mirror in which the observer can see his own organs. The light is placed a little behind the observer's shoulder, and

the concave reflector so adjusted that the light shall fall upon the mirror, which is held in the observer's mouth. The image thus formed is seen by the second observer through the perforation in the reflector, and thrown upon the plane mirror before the observer's own eyes.

There is one fact which may at first cause a good deal of trouble, and that is the inversion which takes place according to the known laws of optics, in the reflected image. That which is anterior and below in point of fact, becomes posterior and above in the mirror; thus the epiglottis appears in the upper portion of the mirror and the epiglottis in the lower. There is no lateral inversion, there can be none, and yet many writers refer to this point again and again, and perpetually remind the reader that what seems to be upon the right is really upon the left, thus rendering obscure that which, in itself, is perfectly plain. When the reader stands face to face with a person, the left hand, and so also the left vocal chord, of the latter is upon the reader's right. The left vocal chord remains perpetually upon the observer's right, no matter whether we regard the parts *in situ*, or in the inverted image in the mirror. So too in all cuts of laryngoscopic figures the left chord is as a matter of course upon the reader's right, the parts being inverted merely in the manner above mentioned. If this point still seems obscure to the reader, a simple experiment will demonstrate it to his satisfaction. Let him take a tube and insert a disk which shall represent the rima glottidis, making some distinguishing mark upon either one of the vocal chords. Then holding the tube in the position of the larynx, as it would be in a patient under examination, and using the mirror he will observe the antero-posterior inversion, and the absence of all lateral inversion. There is therefore no *seeming* change of sides.

Leaving now the consideration of the instrument in itself, and of its manipulation, let us proceed to consider some of the practical results derived from it. The instruments that have been devised for the application of remedies locally are very numerous, and adapted to the use of all substances from the solid caustic to the finest spray. There is scarcely a laryngoscopist that does not bring forward some new instrument specially fitted, as he thinks, to meet some important want. Looking at it from this point of view, one might well share with Dr. Johnson his fear that the larynx would now become the subject of over-medication. The application of the solid caustic is certainly made feasible, and is only subject to the restriction which all cutting instruments share, viz., it should never be used by a beginner, nor until the surgeon has practised sufficiently upon the phantom to enable him to touch definitely and accurately any point he may select. Tobold suggests that practice should be gained by attaching a prepared larynx to a standard upon which a skull is fastened, thus approximating, as closely as possible, the natural relation. In the hands of a skilful operator, therefore, we maintain that the solid caustic is an agent by no means to be shunned. If it be true, as Watson suggests, that in making use of Gibbs's full-bellied camel's-hair pencil it is impossible to employ the mirror with any advantage, it is nevertheless true that we can afterwards determine whether our application has reached the desired spot. So, too, with regard to the application of pulverized substances, and of spray; the laryngoscope shows us what the necessities of the case are, and whether they have been satisfied. These various methods of treatment are dependent upon the fancy of the practitioner, and the same diseases are treated in these different methods by different men. The treatment by inhalation is, however, still on trial before the medical public.

Lewin's volume is a most comprehensive treatment of the whole subject, giving in detail the results of experiments to prove that the substances thus inhaled do actually pass into the air-passages, even into the smaller bronchi, and establishing the fact that in spite of the large amount which is lost upon the face, and within the cavity of the mouth, enough still enters the larynx to produce positive therapeutic effects. The various kinds of apparatus that have been devised, and the different principles upon which they depend, are fully set forth, together with the medicaments to be used, and their special indications. The second part of the work, which is especially noteworthy, presents in detail the laryngoscopic appearances in various diseases of the larynx. We apprehend that the treatment by inhalation will be found most valuable in some forms of aphonia, in acute and chronic catarrh, and perhaps in croup and diphtheria. Many pages are devoted to the consideration of diphtheria and its treatment by this method. The remedies chiefly employed were tannin, alum, and the *liq. ferri sesquichl.* Although the author does not mention the permanganate of potash, still from its acknowledged antiseptic properties, we think that it might well deserve a trial. For ulcerations in the larynx, the application of powders and of liquids is desirable, but they are still open to the objection that in either case the medicament is scattered upon the sound as well as the unsound tissue. The application of the solid caustic of course obviates this difficulty, but, as we have said, none but an expert and facile operator should undertake its use.

If there is any one department in which laryngoscopy may claim for itself the highest consideration of the profession, it is in the diagnosis and removal of laryngeal polypi. Dr. Watson speaks with something of a sneer of the fact that so many laryngoscopists now discover polypi, while Dr. Green at the time of the publication of his work had seen but four cases. However true the latter fact may be, it is but a fact of experience. One very probable reason why polypi were not more frequently recorded prior to the days of laryngoscopy, may be that they were not sought after. At all events the records are clear and explicit, that scores and scores of cases of laryngeal polypi have been discovered, and have been removed by the aid of the laryngoscope. Here, too, each laryngoscopist seems called upon to devise an instrument for himself, and so we have, *e. g.*, Von Brun's forceps, Semeleder's sickle-shaped knife, and Mackenzie's knives, which seem to bear a very close resemblance to those made by Leiter, of Vienna. In this country resort is still had to laryngotomy for the removal of these growths, but we think the day is not far distant when this operation will in such cases be the exception, and the removal *per viam naturalem* the rule.

There is one point in diagnosis in which the availability of the laryngoscope is particularly shown, and upon which evidence is accumulating. We refer to the diagnosis of tumours pressing upon the recurrent laryngeal nerve, and thus giving rise to an alteration in the voice. These may be of aneurismal origin, as of the arch of the aorta, the laryngeal symptoms being among the earliest manifested, thus enabling the laryngoscopist to make a correct diagnosis while as yet other indications are wanting. Semeleder has reported one case of this kind, Türck reports one, and Lewin one or two. The laryngoscope in such cases reveals a paralytic condition of one vocal chord, while the other responds readily to the movements of respiration and phonation.

Lewin has reported two or three interesting cases, where one vocal chord shut over the other, in consequence of an unsymmetrical position of the

arytenoid cartilages, and in two of these the cartilages themselves overlapped. Hoarseness and a harassing cough were the manifestations of this condition. In one case the patient found great difficulty in uttering certain combinations of letters, such as *fr*, *br*, *dr*, at the commencement of a word. Without the laryngoscope it would have been impossible to arrive at the diagnosis of these cases, and the patient would probably have been tormented by useless medication.

Another point in which the laryngoscope is of paramount importance is in the discovery of foreign bodies within the cavity of the larynx, and here its negative testimony is no less valuable than its positive. Frequently persons come to a surgeon with the impression that they have swallowed pins, which they think remain in the larynx. In such cases the laryngoscope will generally determine the fact, and, if the pin is present, will facilitate its removal. Dr. Gibb recently reported a case in which a sixpence was lodged in the larynx, and removed by forceps, with the aid of the laryngoscope. At one of the December sessions of the Royal Medical Society in Vienna a case was presented in which a glass bead had been swallowed by a child four years old, and had lodged in the ventricle of the larynx. The surgeon, who presented the case, stated that no trace of it could be seen with the laryngoscope. Laryngo-tracheotomy was performed, and the bead found in the ventricle. It was as large as a pea, and had a stem of one line in length. Störk, a Vienna laryngoscopist of large experience, doubted the possibility of such an occurrence, and thought that such an object could not be wholly concealed even in that situation. We must confess that we share the doubt with him, and think that a more careful examination must have revealed its presence. A sufficient number of cases are, at all events, on record, to prove that the laryngoscope does enable us to detect the presence of foreign bodies, and to remove them without the operation of laryngotomy.

In conclusion, we would merely refer to the fact that galvanism has been applied locally to the vocal chords, and with apparent benefit in some cases. Mackenzie reports two cases of this kind. He has devised an instrument well adapted to the purpose of applying the galvanic current. We have no doubt that it may be used with advantage in those cases of aphonia where no assignable cause can be detected, and where there is a manifest sluggishness in the action of the vocal chords in ordinary respiration.

C.

BIBLIOGRAPHICAL NOTICES.

ART. XX.—*Transactions of American State Medical Societies:—*

1. *Transactions of the Medical Society of the State of New York for the Year* 1865. 8vo. pp. 376.
2. *Transactions of the Twentieth Annual Meeting of the Ohio State Medical Society, held at Ohio White Sulphur Springs, June* 20, 21, *and* 22, 1865. 8vo. pp. 79.

1. THE *Transactions of the Medical Society of the State of New York* for the year 1865, open with the annual address of the President, Dr. FREDERICK HYDE, of Cortland, the leading theme of which is "Medical Education"—the proper preparation for an entrance upon the duties and responsibilities of a practitioner of medicine. The views advanced by Dr. HYDE are in the main sound and perfectly practicable. The subject of medical pupilage receives, as it well deserves, a prominent and especial consideration. As is well remarked, there are considerations connected with the relationship between the medical pupil and his preceptor—the faithfulness, especially, with which the duties of the latter are fulfilled—which have a most important bearing upon the character and efficiency of the entire after-course of medical instruction.

The first of the scientific papers treats of "The Importance of Examining the Condition of the Dioptric Media in some Affections of the Eye," by Dr. C. A. ROBERTSON, of Albany. The remarks of the author apply more especially to the causes of short-sightedness and other defects of vision, and the relief of these by the use of properly adapted glasses. The subject—a most important one—is ably discussed.

The paper which follows on "The Uses and Abuses of Tenotomy in Cases of Muscular Atrophy, with the true Indications for its Employment," is by Dr. C. F. TAYLOR, of New York. With the exception of those deformities which are directly traceable to scrofulous affections of the bones and joints, Dr. Taylor refers nearly all the remaining deformities of the lower extremities, including congenital club-foot, to the effects of paralysis of certain muscles. "That congenital club-foot is actually the result of an intra-uterine paralysis, is, according to Dr. T., sufficiently proved by the fact that much the larger number of club-feet occur in childhood, as a usual sequence of paralysis from dentition and intestinal irritation, and the further fact that there is no appreciable difference between the intra and extra-uterine deformity. Besides, other forms of paralysis are known to occur before birth, rendering the fact of intra-uterine paralysis indisputable."

The deformity of club-foot is caused simply by the continued action of muscular contraction on the bones of the foot—still soft and yielding—destroying their normal size and form, and consequently changing the form and the relation of parts in the entire foot. Whether the deformity occur before or after birth, there is always the same loss of muscular power—the same wasting of muscular tissue—the same contraction of the extensor muscles, with loss of irritability and power in the flexors. Dr. T. accounts for the difference in the contractile force of different muscles in the same paralyzed limb, by which the deformity of club-foot is evidently produced, by the relative position of the muscles—the extensors of the foot of the paralyzed limb as well as the extensors of the leg being kept constantly stretched to the very utmost, until their irritability and contractility are reduced beyond the effect of the primary paralysis. If, on the other hand, the muscles are allowed to relax, the corrugated condition of the contractile fibre is not destroyed but increased; consequently the muscle regains an amount of irritability and contractile power as much greater than the

amount of the primary paralysis would imply, as the amount by which that of the extended muscles is diminished. Starting with the same degree of paralysis, it is seen how the varying results are brought about by accidental causes. Indeed, so far from the fact is it that paralysis causes certain muscles of themselves to contract (that form of paralysis preceding and causing these cases being meant, which is characterized by a simple stoppage of the usual nervous supply, but without irritation in the nerve centre), we shall find, as a matter of fact, that those paralyzed muscles are even less liable to shortening contraction than are healthy muscles.

To effect a cure in club-foot, it is evident that the shortened muscles must be elongated. This may be effected either by apparatus properly adapted to produce extension, or, when this is not possible, by tenotomy. Up to a certain point extension persistently applied will be effective in producing elongation of the contracted muscles. Elongation, however, is produced always by a reduction of the irritability of the muscle, and a diminution of its contractile power. The principal object gained by forcible enlongation of the shortened muscles, as in tenotomy, is liberation of the joint and possibility of motion. Tenotomy also should be considered like elongation by extension, as the very first step in treatment, and not as a last resort after all else has failed. We divide the tendon in order to liberate the joint, rendered inactive by the shortening of the muscles. If there is sufficient latent muscular power to be developed by this liberation, and by the exercise simply of locomotion, when possible, as it is in many cases of talipes, then tenotomy is proper. The operation is only a means to liberate the joint—the redevelopment which constitutes the process of recovery takes place subsequently. Whenever there is not sufficient muscular power remaining to effect the movement of the liberated joint, unless special means are adopted to promote the development of muscular power, the deformity will recur, no matter what had been the apparent benefit of the operation, to perform it, therefore, under such circumstances is unjustifiable. In the majority of cases after the liberation of joint movements, no recovery will take place without the employment of special means beyond the patient's own unaided efforts. Among the first of these in importance, according to Dr. T., is the application of as high a degree of artificial heat as can be borne; the application to be continued for months. This prepares the way for the special exercises by which alone a large proportion of the cases can be permanently benefited. These exercises must necessarily be as varied as the conditions of the cases are varied.

Accompanying Dr. T.'s paper are several drawings of apparatus found useful in various forms of club-foot and other forms of deformity resulting from paralysis.

The next paper is "The Census of New York, to be taken during the present year, considered in its Medical Relations." It is by Dr. F. B. HOUGH, superintendent of the census. It contains some good suggestions, which if faithfully and fully carried out will render the census about to be taken in our neighbouring city, particularly valuable in all its medical bearings.

The paper which follows is on "Phlegmonoid Erysipelas," by Dr. CHAS. C. F. GAY, of Buffalo. It appears that during the latter part of 1864 and the beginning of 1865, there occurred in the city of Buffalo, a number of cases of abscess—an unusual tendency to the formation of purulent deposits, and to the occurrence of cutaneous and cellulo-cutaneous forms of erysipelas, often the result of the slightest scratch or puncture. Dr. G., delineates the form of erysipelas denominated by him phlegmonoid, and which he believes pathologically considered to be as unlike the phlegmonous as the latter is unlike the cutaneous form of erysipelas, by the history of three cases treated by him. The peculiarity of phlegmonoid erysipelas is the formation of deep-seated abscesses with a general adynamic condition of the system. The general location of the abscess is upon the chest, though it has been met with, also, in the neighbourhood of the larynx, beneath the facia of the inferior serratus muscles, and beneath the gastrocnemius. The prominent causes of the disease are bad air, and food, and other bad sanitary and hygienic conditions. The chief remedies besides those adapted to support the strength and improve the nutrition of the patient, are anodynes, blisters, poultices, wet and dry cupping, and the knife. The latter is among the most

important. It should be resorted to as early as possible, never waiting for the appearance of fluctuation. The use of iodine is strongly denounced by Dr. G.

We have next "Extracts from Letters received from Dr. HENRY S. WEST, Physician to the American Board for Foreign Missions." These extracts present a short sketch of the condition of medicine and surgery and of the medical and surgical professions at Sivas, Syria, with a short account of the principal prevailing diseases.

The following paper comprises "Observations on Cerebro-spinal Meningitis, or Spotted Fever, as it prevailed at Carbondale, Pa., in the Winter and Spring of 1863–64," by Dr. CHAS. BURR. Carbondale has always been noted for its exemptions from malarious and other epidemics. The spotted fever commenced in December, 1863, and soon spread over the whole place amid both rich and poor. The greater number of cases occurred in the following January: out of a population of 6,000, there were 400, chiefly children and young persons, destroyed. Though the disease lost its epidemic character towards the close of spring, yet sporadic cases of a milder character occurred throughout the year. It gave no indications of contagiousness.

The young, robust, and plethoric were the most liable to the disease. Of those attacked, a slight preponderance were males. When spotted fever occurred among a number of children and young persons, it often happened that *one*, *two*, or *more* only were attacked, while in other cases all the family would be taken down at the same time or very nearly so. The great majority of women who were attacked were mothers who had become worn out by want of sleep, care, anxiety, and grief consequent upon nursing children who had died of the disease. In some instances undue fatigue and exposure to cold appeared to act as exciting causes of the disease. The proportion of recoveries among mature adults was greater than among children and young persons.

The only remedy, says Dr. B., of which I can speak with confidence is free counter-irritation about the head, neck, and shoulders, and, if necessary, along the spine. In addition to this, Dr. B. keeps the bowels open, and uses such other remedies as the varying symptoms would seem to indicate, as opium to relieve pain, and tonics and stimulants to sustain the strength when this is failing.

The next is "On the Modus Operandi of Quinine," by Dr. H. N. EASTMAN, of Geneva Med. Coll., N. Y. Dr. Eastman's statement that he regards quinia as one of the chief of the antiphlogistics, if not the chief, will no doubt startle the majority of the profession, and yet, when all the facts connected with what are now ascertained, from careful clinical observations, to be correct therapeutical applications of the article, it will be found much nearer the truth than it would at first seem to be.

The ensuing article by Dr. ARMSBY, "On Ligature of the Subclavian Artery," will be found in the April number of this Journal for 1864.

The next paper presents "Suggestions relative to the Pathology of Pneumonia," by Dr. S. O. VANDERPOOL, of Albany. The suggestions thrown out by Dr. V. are, that pneumonia cannot result *alone* from exposure to cold, no matter how prolonged and intense, but that coexisting with such exposure there must be some morbid materials circulating in the blood which act upon the sentient fibres of nerves distributed to the air-cells of the lungs, partially paralyze them, and thus permit a change of temperature, or any irritant cause to produce the phenomena of inflammation and its sequences. Further, that in pneumonia two entirely distinct phases of disease are presented. In the first, lasting from four to seven days, the system is struggling to eliminate the poisoned material, during which period the symptoms are very acute and the arterial reaction violent. At the close of this stage there is a decided abatement in all the constitutional symptoms, and an exudation into the air-cells—hepatization. From this period commences the lung disease proper. Whatever of subsequent constitutional symptoms ensue, result from efforts to relieve the solidified air-vesicles of their foreign material.

This view of Dr. V. in respect to the pathology of pneumonia is no doubt true in respect to a limited number of cases, but we hardly think it can be shown to be a true theory of the disease in all cases.

The tolerably elaborate paper which follows, presenting a series of "Facts in Relation to Placenta Prævia, with a Review of the various Opinions respecting its Anatomy, Physiology, Pathology and Treatment," by Dr. ISAAC E. TAYLOR, Prof. of Obstet., Diseases of Women and Children in the Bellevue Hospital, etc. etc., must be carefully studied in extenso, in order to understand the value and true bearing of the following propositions, which Dr. T. believes to be proved by the facts adduced by him.

"1. The perfect integrity of the cervix uteri during utero-gestation, in its whole length; neither developing from above downwards, or from below upwards, but modified by physiological softening to prepare it for the office of expansion at the time of labour, and not before, for the exit of the child.

"2 The *placenta prævia* centralis is over the os uteri internum, and not in the cervix uteri at all, before labour commences, as is believed and depicted.

"3. The limit of spontaneous detachment of the lower polar circle—the boundary line of Dr. Barnes—is not the zone of safe attachment after separation of the placenta.

"4. The cause of arrest of the flooding in general is the limit of the expansion of the os uteri *internum* to the extent of 12 or 14 inches in circumference, and 3½ to 4 in diameter, and 3 in length.

"5. The boundary line thus reached by nature is only safe so far as separation occurs by the contractions of the uterus.

"6. The hemorrhage comes from the uterus as seen, and not from the placenta.

"7. The flooding is diastolic, not systolic.

"8. The method of separation of the placenta by the uterine contractions is from the centre, and not from the margin.

"9. The plan of Dr. Simpson is preferable in cases of extreme exhaustion to version, until nature can be restored in some degree to justify its performance.

"10. External version should be adopted first, in transverse presentations of the shoulder, neck, or face, before rupturing the membranes; if not successful, then internal and external version together; then, if the other methods fail, true version, but not rapidly.

"11. The former and usual plans are confirmed in their value by these investigations, such as tamponing, rupturing the membranes, and giving ergot."

The paper of Dr. T. is illustrated by eight well-executed lithographs.

In the next article attention is called, by Dr. WM. MANLIUS SMITH, to the excellent remedial properties possessed by certain *non-officinal compounds of iodine*. They are, 1st, the iodide of cinchonium. It appears to combine the resolvent properties of iodine with the tonic properties of cinchona. Hence suggesting itself as a remedy in strumous and tuberculous diseases. It is more easily kept unimpaired in activity, less disagreeable to the taste, and consequently adapted to all cases where iodine without iron is indicated. It is preferable to iodide of potassium, inasmuch as it rather increases than diminishes the digestive power of the stomach, and its use may be long continued without painful results. It can be given in doses of one, two or more grains.

A second preparation is the iodide of cadmium. The advantage it has over other preparations of iodine for external use, besides its want of colour, is its slightly irritating properties when applied to the unbroken skin. Dissolved in glycerine—60 grs. to one ounce of the latter—it is a very valuable local application in cases of bronchocele. It is to be applied twice a day, and a cloth wet with it kept on the swelling all night, and if convenient all day also. At the same time there is to be given internally, in most cases, three or four times a day, a pill composed of 1½ gr. of iodide of cinchonia and $\frac{1}{36}$ gr. of strychnia. Dr. S. remarks that all cases of bronchocele thus treated have rapidly improved, and when the use of the above remedies has been persevered in sufficiently long, the swelling has totally disappeared; in some cases in about one month, in others, however, only after three or four.

A very valuable paper on vaccination, and on the possibility of communicating syphilis and other diseases through the vaccine virus, is presented by Dr. CYRUS RAMSAY, Registrar of Records and Statistics of the City of New York. The writer has brought together, from a variety of reliable sources, a series of statistics and conclusions collected amid ample fields for observation, illustrative of the

prophylactic powers of vaccination, the extent and duration of the protection afforded by it, and with proper care its freedom from any power of impairing the health of the system or of imparting to those upon whom it is performed any other disease than vaccinia—which of itself is incapable of causing any amount of suffering, and certainly no injury temporary or permanent in the case of the tenderest infant. The paper should be carefully studied by every physician.

The paper which follows is on "Smallpox in New York, with some Statistics and Remarks on Vaccination." It is the report of the Committee on Public Health of the New York Legislature, submitted Feb. 10, 1865, by Dr. W. H. RICHARDSON, of Westport, N. Y. This is also a valuable document, and fully bears out the favourable verdict borne in favour of vaccination, by the medical profession in all countries as affording a certain protection against smallpox, when carefully performed with good and efficient matter, the certainty that complete prophylaxis has been imparted by it being tested in every case by a subsequent repetition of the operation.

Eleven cases are next presented by H. S. DOWNS, of New York, in illustration of the "mutual antidotal powers of opium and belladonna."

The following paper is on "The New Mode of Remedial Inhalation," being an abstract of a communication from Dr. L. ELSBERG, of New York. The new mode of inhalation referred to consists in the adaptation of remedial agents for inhalation into the fauces, nares, larynx, and bronchi by *nebulization*. The nebulization of a fluid consists in dividing, by an appropriate apparatus, each drop into such innumerable fine particles that, forming a nebula or spray suspended in or mixed with the air, it may be freely inhaled. Those who feel inclined to test the therapeutic value of inhalation in the manner here proposed, will find, in the present abstract from Dr. E., a description of the best apparatus for nebulizing fluids, the proper mode for conducting their inhalation, and the nature and condition of the diseases in which inhalation of nebulized fluids is indicated.

The well-drawn up report of Dr. SYLVESTER D. WILLARD, "On the Condition of the Insane Poor in the County Poor-houses of the State of New York," reveals to us a state of things, the existence of which, in our ignorance, we could not have supposed possible at the present day among any civilized people. The miserable condition of the insane poor in the county almshouses of the State of New York calls loudly upon the legislature of that State to apply a prompt and efficient remedy to the abuses which exist; abuses, which, if they be allowed to continue, must necessarily cast a stigma upon the fair fame of our sister State.

The next paper is a report of the remarks of Dr. H. D. NOYES, on the optical principles of the ophthalmoscope and its use in diagnosticating diseases of the eye, introductory to the exhibition of several varieties of the instrument, and the explanation of their respective peculiarities. The great practical advantage of the ophthalmoscope is unquestionably accuracy of diagnosis in affections of the eye, and consequently more certain prognosis and more judicious treatment. If the disease be incurable, the fact is rendered patent, and a useless, perhaps exhaustive treatment avoided. If curable, the fact is promptly discovered, relieving the patient's mind of doubt and anxiety. Mistakes in diagnosis are avoided; such as referring impairment of vision to a congested or inflamed condition of the retina or choroid, when by the aid of the ophthalmoscope the true cause is found to consist in a condition of the eye which is to be overcome only by the assistance of proper optical glasses. Many cases of asthenopia, we are thus enabled immediately and permanently to relieve, that would not be so without the light afforded by the use of the instrument. These are some of the advantages gained by the employment of the ophthalmoscope—the furnishing us with positive facts in place of loose inferences—objective phenomena instead of subjective statements.

We have next the history of a very interesting "Case of Epithelial Cancer of the Left Cheek and adjacent Portion of the Lips," occurring in a female fifty-four years of age, in which by a removal of the entire substance of the cheek, and successful closure of the opening thus made by a plastic operation, an entire cure was effected with comparatively little deformity. The case is reported by

Dr. J. C. HUTCHINSON, Professor of Surgery in the Long Island College Infirmary. Its history is illustrated by well-executed lithographs, and accompanied with notes by Dr. J. C. Goodridge, Jr.

The ensuing paper "On Diploteratology," is a very learned, interesting, and instructive essay on *compound* human monsters. It is intended to comprise the history, literature, classification, description, and embryology, of double and triple formations, including the so-called parasitic monsters, fœtus in fœtu, and supernumerary formation of parts or organs in man. Its author is Dr. G. J. FISHER. The monograph will also present a brief history of the science, a chronological list of its bibliography; a synopsis of the principal classifications that have been adopted by various writers; the distinctive characters diagnostic of the several forms of compound monsters, with illustrative cases, the embryology of duplex formations, the relation of the subject to obstetrics and medical jurisprudence, with a general summary of the principles and laws deduced from the study of the subject in all its relations. When completed, if the entire plan be carried out by Dr. Fisher as laid down by him in the introductory chapter, the work will be a valuable addition to our medical libraries, replete with interest and solid instruction to every practising physician. The portion before us comprises only the history and bibliography of the science. Under the latter head a list of upwards of two hundred and thirty different works on the subject of monstrosity, issued from the middle of the sixteenth century to the present time, are given, interspersed with short bibliographical comments; besides numerous references to articles on the subject contained in the serial publications of some of the principal scientific societies of Europe.

The most curious part of the paper before us is the section on the fabulous period in the history of monstrosity extending to the eighteenth century. Casting our eyes over the plates by which this section is illustrated, we are struck with the strangeness and absurdity of the monstrosities pictured by writers of the olden time, and yet, it is rendered more than probable, by a careful study of them in the light of modern science, that they will be found, however absurd and fabulous in their distorted representation, to have been actually described and pictured from positive, though misapprehended facts related by ignorant and credulous persons.

The remainder of the papers in the the present volume of the *Transactions*, is an account of the revival and reorganization of the Cayuga County Medical Society, notice of the early physicians of Chautauque County, report of delegates to the New Jersey State Medical Society, and notices of deceased members of the New York State Medical Society, etc.

The volume closes with an abstract of the proceedings of the fifty-eighth annual session, list of delegates, of members, etc. etc.

2. The printed *Transactions of the twentieth annual meeting of the Ohio State Medical Society*, held June, 1865, commence with the journal of proceedings, after which follows a report "On Diseases of the Eye," by Dr. A. METZ, of Massillon. Though it contains no original observations, nor anything especially new in relation to the affections or the visual organs, the report of Dr. Metz is both interesting and instructive. It comprises a short notice of Donder's work on "Anomalies of Refraction and Accommodation," especially in reference to *hypermetropia and astigmatism*—faults of the refractive powers of the eye of somewhat frequent occurrence—and to *myopia*, with the proper treatment, hygienic and surgical, which is demanded in cases of these visual defects, especially the professions or occupations and physical habits to be avoided by those labouring under them; and the nature and power of the glasses to be worn by different patients according to the character and extent of their defect of vision respectively. Some remarks are likewise given in respect to the proper treatment of *granular conjunctivitis*. Under this head we are pleased to see the following point urged as one worthy to be kept in view during the daily practice of the physician.

"Perhaps the only real advantage we can claim for the present day, in the treatment of granular conjunctivitis, is the somewhat general recognition of the fact that we must rely more on the absorption of the granulations than on their

destruction by caustics, and that we must always aim to preserve, if possible, the integrity of the conjunctiva."

The report closes with a short notice of the simulation of *amaurosis* by malingering soldiers, with the means for detecting the fraud.

"Some Observations on Blood Diseases." By Dr. E. B. Stevens, of Cincinnati. The subject of this paper is a most important one. We are rapidly drifting back in our doctrine of disease to the humoral pathology. Always all diseases, but especially idiopathic fevers, are, by many physicians of the present day, attributed to some vice of the blood, either to a destruction of its normal crasis, or to the introduction into it of some foreign poisonous matter. We fear, however, that the views in relation to this subject entertained by our contemporaries are but vague without the support of any series of well-established facts based upon close and cautious observations. There is much good sense exhibited in the remarks of Dr. Stevens, and he has certainly enumerated more than one unquestionable fact in relation to the subject of "blood diseases." His discussion of the subject is, however, too general and indefinite, with too little reference to known facts or pathological investigations, to lead to any safe practical conclusions.

Three highly interesting cases of "inversion of the uterus" are related by Dr. R. L. Sweeny, of Marion, in which reposition was effected, in one of them after a lapse of two months from the occurrence of the accident. The history of these cases is an additional contribution to the already accumulated evidence in favour of reposition in chronic cases of inversion of the uterus, and for an abandonment in such cases of excision by the ligature, scalpel, or ecraseur.

"Report on Puerperal Convulsions." By Dr. W. C. Hall, of Fayetteville. Of this very excellent report we can only afford room for the general conclusions as drawn up by the author.

1 "The nature of puerperal convulsions is yet undecided. 2. The cause or causes are undetermined. 3. Uræmia as the only cause is not only doubted, but denied, if not disproved. 4. The dependence of the convulsion upon the retained urea in the blood, by some supposed to be converted into carbonate of ammonia, is at best but a hypothesis, the truthfulness of which is strongly disproved by the experiments of Dr. W. A. Hammond, experiments precisely similar to the one performed by Frerichs upon which he reared his carbonate of ammonia theory. 5. Post-mortem revelations are unsatisfactory, and at best present but little that is positive in regard to the pathology of puerperal convulsions. 6. In reference to the treatment, the almost universal testimony is in favour of reasonable depletion, general and local. The use of chloroform and of opiates is strongly recommended and almost as strongly denounced. The speedy and prompt emptying of the uterus is the only part of the management of puerperal eclampsia, the propriety of which is universally agreed upon."

The report next in order is "On the Condition of the Insane Inmates of the Prison of Jefferson County." It depicts the deplorable want of humanity in the treatment of the helpless creatures immured in filthy, badly ventilated, and unfurnished cells, without a ready supply of water for allaying thirst and the preservation of personal cleanliness; destitute of a sufficiency of clothing to cover their nakedness, with a free commingling of the two sexes. The picture of this Ohio Insane Asylum reminds us of some of the reports of Howard as to the condition of similar institutions in Europe during the last century.

The remainder of the volume comprises a list of "surgeons of the Ohio regiments who died in the service of the United States, and obituary notices of deceased members of the State Medical Society." D. F. C.

ART. XXI.—*Reports of American Hospitals for the Insane:—*

1. *Of the Maine Hospital, for the fiscal year* 1864–65.
2. *Of the Vermont Asylum, for the fiscal year* 1864–65.
3. *Of the Worcester (Mass.) Hospital, for the fiscal year* 1864–65.
4. *Of the Taunton (Mass.) Hospital, for the fiscal year* 1864–65.
5. *Of the Northampton (Mass.) Hospital, for the fiscal year* 1864–65.
6. *Of the State Hospital of Pennsylvania, for the year* 1865.
7. *Of the Dixmont (Western Pennsylvania) Hospital, for the year* 1865.
8. *Of the U. S. Government Hospital, for the fiscal year* 1864–65.

BEFORE we enter more directly upon the examination of the pamphlets gathered from various quarters, and now lying together upon our table, we have a word to say to our friends, the Superintendents, with whom, for many a year gone by, we have "held sweet converse" through the medium of their annual reports.

When hospitals were but few, and there was no press of other matter for the pages of the *Journal*, we could give to the authors of these yearly missives a protracted hearing. But circumstances have changed, and we are now "cabined, cribbed, confined." While, on the one hand, the number of institutions for the insane has been largely increased, the progress of science, the greater number of medical writers, and the stupendous military and naval conflict through which the nation has recently passed, have combined in bringing so great a *stress* of material to each quarterly issue, that in the compilation of these notices much must be rejected which would otherwise find admission. In the course of the last few years no inconsiderable quantity of matter, in this series of articles, has been not only selected but put in type, and afterward "struck out," by the editor, solely for the want of room.

1. Applications for admission to the *Maine Insane Hospital* had become so numerous that an additional wing for the women's department was erected in the course of the fiscal year 1864–65.

	Men.	Women.	Total.
Patients in hospital, Dec. 1st, 1864	128	126	254
Admitted in course of the year	87	55	142
Whole number	215	181	396
Discharged, including deaths	73	46	119
Remaining Dec. 1, 1865	142[1]	135[1]	277
Of the discharged there were cured	31	16	47
Died	11	13	24

Died with consumption, 10; diarrhœa, 3; epilepsy, 2; congestion of the brain, 2; apoplexy, general paralysis, exhaustion, mania, pneumonia, gastritis, dysentery, and accidental drowning, 1 each.

"Among the assigned causes of insanity in those admitted since our last report," says Dr. Harlow, "was 'excessive use of tobacco.' Not only did the disease seem traceable directly to this as the prominent and exciting cause in these (two) cases, but we see daily the ill effects of the pernicious habit of smoking and chewing this noxious weed upon those who come to us for treatment. It seems to aggravate the disease in all cases, and cannot be too strenuously proscribed in the treatment of insanity, especially in cases of an acute form.

"Said one of the young men, during convalescence, whose insanity seemed to be the plain result of the excessive use of this deleterious production, 'I contracted the habit of using tobacco in the army, and during some of the long, tedious marches in which I was engaged, it was my main support, especially when short of provisions. I could march sixteen hours a day, with little or

[1] The report says "one hundred and forty-three males, and one hundred and thirty-four males," but such is not the correct deduction from the preceding sums.

nothing to eat, only give me plenty of tobacco.' Just before his insanity assumed its most aggravated form, which was mental exaltation accompanied with brilliant delusions, he smoked between twenty and thirty cigars during an evening. This, he confessed, after recovery, was the cause of his malady.

"The use of tobacco by persons in whom it has not become a second nature, tends to insomnolence, which, if long continued, produces mental disturbance and sometimes insanity."

2. In the report for the official year 1864–65, of the *Vermont Asylum for Insane*, Dr. Rockwell is, as is his wont, laconic in detail and brief in general.

	Men.	Women.	Total.
Patients in hospital, August 1, 1864 . .	218	240	458
Admitted in course of the year . . .	82	62	144
Whole number	300	302	602
Discharged, including deaths	59	63	122
Remaining, August 1, 1865	241	239	480
Of the discharged, there were cured . .			55
Died			42

"A good number have been restored to reason and those enjoyments which reason alone confers. The recovery of the curable is not the only benefit derived from institutions of this kind. To improve the condition of the incurable, so as to make them comfortable and happy, frequently requires more skill and perseverance than the restoration of the curable.

"Uncontrolled desires and unrestrained indulgence of temper will often prepare the young for that disordered state of the brain which strongly predisposes to insanity.

"One great preventive of insanity is the forming of correct habits. A person of peevish, fretful habit, and inclined to look on the dark side of things, is far more liable to become insane than one of a cheerful, hopeful disposition, who makes the best of every condition of life.

"Persons predisposed to insanity should avoid everything that has a tendency to impair the general health, such as want of physical exercise in the open air, passing too much time in warm rooms, sleeping on feathers, engaging in employments that will not allow sufficient sleep at proper hours, and allowing themselves to be too much disturbed by the unpleasant trials of life."

3. The general statistics of the *Worcester* (Mass.) *Lunatic Hospital*, for the year ending with the 30th of September, 1865, are as follows:—

	Men.	Women.	Total.
Patients in hospital Oct. 1, 1865 . . .	167	177	344
Admitted in course of the year . . .	117	104	221
Whole number	284	281	565
Discharged, including deaths	115	109	224
Remaining, Sept. 30, 1866	169	172	341
Of the discharged there were cured . .	51	54	105
Died	12	21	33

Deaths from phthisis pulmonalis, 13; paralysis, 6; epilepsy, 4; inanition, 4; exhaustive mania, 2; marasmus, 2; and old age, 2.

"The death of those who die in the hospital is rarely attended with any apparent suffering or distress, and still more rarely is there any return of reason, bringing with it aspirations after a new mode of living, nor is there any appearance of agony or anxiety.

"The delusions of life often extend to its termination. Two of those who died during the year could not believe they were born to die. Death to them was not a reality. The belief in the immortality of their bodies was to them the only reality. In one the dread of death was more terrible than death itself, and having lived for years in the torment of insane fear, died at last in perfect quiet, unaffected and unappalled. Two died so suddenly that pain could hardly

have been experienced, or the nature of the change appreciated. Four sank in the coma which succeeds epilepsy. In one, a morose and repulsive disposition was softened at the approach of death, and in another habitual acrimony and discontent were aggravated. One who had for weeks resisted every attempt at alleviation, was at last most distressingly eager for medical aid. One quite accurately foretold his death when its approach was not apparent. * * *

"The number of deaths in the hospital is pretty nearly determined by the number of epileptic, paralytic, and consumptive patients admitted."

One of the principal topics of Dr. Bemis's report is a proposition for the modification of the hospital, so that the accommodations and the privileges allowed the patients, as well as the restraints imposed upon them, shall be less uniform, and more in accordance with their diversified conditions. The doctor would effect this object by the construction of two classes of cottages, in the vicinage of the principal edifice, to be occupied by all to whom a larger liberty and a greater extent of privilege can be given, than to those who are turbulent, violent, or otherwise proper to be subjected to a closer confinement.

"In the carrying out of this or any similar plan," says Dr. B., "a departure would of course be made from the general style and character of hospital buildings. There would be the central edifice; the hospital proper, in which would be placed all the cases of acute mania, the violent and dangerous, the suicidal and troublesome; having every arrangement for classification, and every convenience for the treatment of insanity; with large and airy sleeping rooms, and day rooms, and with improved facilities for bathing, and a more reasonable arrangement for water-closets.

"There would be, on one hand, a few cottages, plain, neat, and convenient, for the quiet, harmless, and industrious of both sexes; with workshops where they could follow such industrial pursuits as could be made available, with the laundry and bakery for the whole.

"On the other hand, there would be the residences of others, who would devote their time to the cultivation of gardens, in music, reading and writing, walking and riding, and such other light occupations and amusements as they were accustomed to follow when in health.

"Then, there would be the chapel and lecture room, in which there would be at regular intervals, divine service and frequent lectures, sociables, and reading clubs.

"One great benefit to accrue from all this, is a near approach to the family system, and the kindly influences of home treatment. Could this system be adopted and carried into operation, the insane would have all the benefits they now have, with the added advantage of the family circle, to such as could be admitted to its privileges; homely surroundings, and the enjoyment of many of the social comforts which make life pleasant. They would have, also, the advantage of well-trained nurses and attendants, whose business for life it would be to care for and sympathize with them. They would enjoy a more free and generous style of amusement and exercise, and more frequently, and with less restraint, mingle in the society of friends and relatives—in a word, all the enjoyments of life would be multiplied, and all the social endearments, to a great extent, preserved, without diminishing in any degree the prospect of recovery, or increasing in any way the labours of the institution."

The plan here proposed is similar to that which, some years ago, was advocated by the late Dr. Galt, of the Williamsburg Hospital, Virginia, and by some European writers.

Another subject dwelt upon at some length in this report, is the devising of some means whereby "a full corps of reliable, well-educated, and thoroughly trained assistants" can be secured to the hospital. It appears to us very evident that this great desideratum can never be attained until the wages paid for such services are sufficiently large to operate as an inducement to make the employment a permanent business.

4. At the *Taunton* (Mass.) *Lunatic Hospital* the most important numerical results for the official year 1864–65, are as follows:—

	Men.	Women.	Total.
Patients in hospital, Sept. 30, 1864 . . .	164	199	363
Admitted in course of the year . . .	97	100	197
Whole number	261	299	560
Discharged, including deaths	96	121	217
Remaining, Sept. 30, 1865	165	178	343
Of the discharged, there were cured . .	36	53	89
Died	20	12	32

Deaths from phthisis, 6; maniacal exhaustion, 5; general paralysis, 5; marasmus, 4; apoplexy, 3; paralysis, 2; fever, epilepsy, inanition, old age, suicide, erysipelas, and gastritis, 1 each.

The statistics of the hospital, from the time of its opening, show that the number of deaths from diseases necessarily springing from, or involving, organic lesion of the brain, is threefold greater among the men than among the women. This difference "may, perhaps, be accounted for by the fact that intemperance, licentiousness, and severe mental labour, are so much more frequent among the former."

"The fact," remarks Dr. Choate, "that the late civil war gave a decided check to the demands upon us, has continued during the past year. The number of admissions during the last four years has averaged twenty per cent. less than during the year immediately preceding the rebellion, and has been decidedly smaller than during any year since 1856."

"Seventy-two per cent. of all recoveries which have taken place in the past seven years, have been in cases which had been less than three months' duration before admission; ten per cent. in cases of between three and six months' duration; and seven per cent. in cases of between six and twelve months' duration; making an aggregate of ninety per cent. of all recoveries occurring in patients who had been less than one year insane before admission. Two and a half per cent. only had been insane more than three years.

"The circumstances of social position and pecuniary condition, of locality, of physical stamina, of cause, and of race, all materially affect the proportion of recoveries. As a general rule it may be stated, that among the poor a larger proportion are likely to recover, for the reason that they are of necessity earlier placed under hospital treatment, and we shall see that prompt and early attention is one of the most important aids to success in treatment; delay its most dangerous foe.

"In this important particular, the hospital is fortunate, as its patients are generally either from the poor or from a class in moderate circumstances. In the matter of cause, too, it is also fortunate. The physical causes largely predominate. In these there is the best field for medical treatment. Many of them, like intemperance, are removed by the mere fact of hospital restraint; others are capable of removal by judicious management. In the points of the locality from which the cases are received, of general physical health and constitution, and of peculiarities of race, we are less fortunate. About one-half of our admissions are from a large seaport city, and many of these from its worst classes. Evil habits, irregular living, hard labour, confined rooms, and a general disregard, often compulsory, of the laws of health, have impaired their physical systems so far that mortality among them becomes greater, and recovery necessarily less frequent. The large proportion which they bear to our whole number must increase our percentage of deaths, and influence unfavourably our percentage of recoveries. The large number of foreign lunatics received annually into this hospital, amounting to nearly half of the whole number of admissions, also affects unfavourably its curative results, as the records of lunatic hospitals show, beyond a doubt, that the ratio of recoveries among this class is smaller than among our native population."

From the remarks upon the predisposing causes of mental disorder, we take the subjoined extract:—

"The inquiry as to how hereditary tendency is formed, is the most important one in connection with the whole subject of insanity. That hereditary predisposition, like the large proportion of exciting causes, is originally within the control of

the individual, and is produced by some violation of the laws of nature, seems in the highest degree probable. Indeed it is by no means unlikely, that the same causes, the same violations of nature, the same wrong way of life, not carried far enough in the first generation to excite disease, may in the second or third, or farther on, the same tastes and habits being transmitted, be finally sufficient by accumulation to produce it, or to produce in a whole family a condition of the constitution which will make them an easy prey to slight exciting causes of disease. And in this manner a man's sins and errors may most emphatically be said to be visited upon his children's children. Parents may unquestionably do much by a carefully considered plan of education, and by guarding their children closely from their own errors, towards warding off family diseases, and even towards breaking up hereditary tendencies. It is a most instructive fact, that in whatever direction we pursue our investigations into the cause of this direful disease, we must inevitably be brought to this same conclusion: the necessity of pursuing more closely the laws of nature; of obeying more strictly the dictates of a pure and enlightened morality."

5. It appears by the report of the *Northampton* (Mass.) *Lunatic Hospital*, that in the course of the official year terminating with the 30th of September, 1865, many improvements were made in the details of the internal construction of the building, rendering the operations of the hospital more easy, systematic, and orderly. A plan, simple and at the same time effective, for the distribution of supplies was introduced, and was working much to the satisfaction of both the executive officers and the trustees.

	Men.	Women.	Total.
Patients in hospital, Sept. 30, 1864 . .	144	190	334
Admitted in course of the year . . .	70	64	134
Whole number	214	254	468
Discharged, including deaths	56	60	116
Remaining Sept. 30, 1865	158	194	352
Of the discharged, there were cured . .	17	16	33
Died	17	24	41

Deaths from phthisis 14; marasmus 14; epilepsy 2; paralysis 2; injury 2; apoplexy 2; suicide 2; typhomania, dropsy, and intussusception, 1 each.

"Of the whole number of patients admitted in the year, the disease of only thirty-four was of less duration than one year. In all the rest it had passed into the chronic stage or form, the comparative incurability of which is now perhaps too generally known to require its re-assertion."

A very large proportion of the patients are incurables; no less than forty-four of that class having been transferred, in the course of the year, from the other State hospitals, and counted in the number of admissions.

"As insanity," says Dr. Earle, "may arise from a variety of causes, and be accompanied by a diversity of conditions of the body, either generally or of some one or more of its important vital organs, so the treatment in different cases varies. As in most other diseases, each case must be studied, and managed according to the conditions found.

"The great mass of medicine proper administered here, belongs, however, to a few classes of the materia medica. Tonics, stimulants, soporifics—with some alteratives and cathartics—such are the agents chiefly used.

"In the course of the past year, the hypodermic method of administering morphine has been used in several cases, with eminently beneficial effect. As that medicine, when thus administered, is not followed by the unpleasant consequences—sickness and headache—which so frequently succeed its hypnotic effects when given by the mouth; and as many patients needing it refuse to swallow *any* medicine, the hypodermic method becomes a resource of very great value in hospitals. 'Blessed,' as Sancho Panza said in reference to sleep, 'blessed be the man who first invented' it."

The report contains a pretty full exposition of the system of moral treatment, under the heads of Labour, Religious Worship, Lectures, Reading, Recreation and Amusement, and Dancing.

"Of all the means of amusement, no one during the past year has more constantly been in use than the billiard table. Several of the patients were good players before admission, and a considerable number have learned the game while here. It is an almost invaluable acquisition to the hospital. The game is peculiarly attractive, and hence patients who are indisposed to exercise sufficiently, or whose minds are so concentrated upon themselves that it is next to impossible to induce them to turn their attention to anything external, are more likely to become interested in it than in other games, or in manual employment."

"In this amusement (dancing), as in everything throughout the daily routine or the special exercises of a hospital, the great object—and the great triumph, if that object be attained—is, an approach as nearly as possible to the proprieties of the occasion, as exhibited in good society among the people at large. No fantastic dresses are permitted; no intentional exhibition of diseased vagaries of action allowed. Enjoyment for the multitude must not be sought by an exposure of the misfortunes of the individual. In short, it is intended that it shall be a rational amusement, pursued in a rational way."

6. The medical history of the *State Lunatic Hospital of Pennsylvania*, for the year 1865, furnishes the following numerical results:—

	Men.	Women.	Total.
Patients in hospital, Dec. 31, 1864 . .	151	130	281
Admitted in course of the year . . .	67	86	153
Whole number	218	216	434
Discharged, including deaths	61	67	128
Remaining, Dec. 31, 1865	157	149	306
Of the discharged, there were cured . .	17	23	40
Died	15	20	35

Causes of death.—Variola 5; exhaustion of chronic insanity 17; exhaustion of acute mania 4; phthisis pulmonalis 2; epilepsy 2; hydrothorax, dysentery, acute tonsillitis, paralysis, and apoplexy, 1 each.

Dr. Curwen gives an account of an epidemic of variola which prevailed in the hospital in the winter of 1864–5. We quote the most important passages.

"Introduced through some of those employed in the domestic arrangements of the hospital, the disease had infected a number of persons in different parts of the house, and had sickened them so as to confine them to their beds, before its true character was discovered. The number of male attendants, which was one-third less than usual, was rendered smaller by several leaving on account of the epidemic; and as it prevailed more extensively among the men, the duties of those who remained were much increased, and it became impossible to separate the sick entirely from the well, even if a room could have been had for the purpose. The only resource was in the ample use of disinfectants, and as free ventilation as the severely cold weather would permit. Vaccination was resorted to in a large number, and while it may have been of service in warding off an attack from some, it did not benefit others, whose systems were doubtless strongly infected at the time of their vaccination."

"The cases of the disease occurring in those employed, and among the patients, have been kept separate, with a view of seeing what the rate of mortality may have been in the two classes comparatively, and also to ascertain, if possible, the influence the nervous disorder of the patients may have had on the course and termination of the disease.

"The nervous disorder had an unquestionable influence in producing a fatal result (irrespective of any special complications), by lowering the general constitutional power, and thus rendering the system less able to react, cast off the disease and establish a healthy action. This was also shown in the cases of those who recovered, in that they were slower in regaining their previous bodily condition.

"Of those attacked among the employed, there were sixteen men and eight women. Of these twenty—thirteen men and seven women—had the disease in the simple or mildest form: some so lightly as not to confine them for more than part of a day. Four—three males and one female—had the disease in a

severely confluent form, and of these two died—one man and one woman. The man died on the fifteenth day, or the eleventh from the appearance of the eruption, and the woman on the twelfth, or the eighth day from the appearance of the eruption.

"Among the patients there were fifty-three cases—thirty-three men and twenty women. Of these thirty-six—twenty men and sixteen women—had the disease in a mild form; fourteen—males ten and females four—had the severe confluent form of the disease. The deaths were ten, five of which—males three and females two—were the direct result of the disease. In the other five cases, there were various complications.

"The deaths took place on the following days, dating from the first symptoms of sickness: One on the sixth day (the case complicated with rheumatism and erysipelas); two on the seventh day (one of dysentery); one on the ninth day (that with epilepsy); one on the tenth day; one on the twelfth day; two on the fourteenth day; one on the twenty-sixth day (the very worst case of confluent smallpox which occurred during the epidemic, and I hope never to see another so bad); and one on the thirty-eighth day (that from dropsy of the chest).

"It may be noticed as an interesting fact, that erysipelas of the face and scalp prevailed in the hospital at the same time, and of those who suffered from smallpox, one had erysipelas preceding, and three following the attack.

"In reference to the matter of pitting by the pustules, it may be noticed as a singular fact that where the patient broke open the pustules, either just before or about the period of maturation, scarce any mark was perceptible.

"In one person there was an undoubted second attack of the disease, as the marks of the previous attack were clearly to be seen, and the patient had a distinct recollection of having been sick with it."

A discussion of the condition and the necessities of the chronic insane of the State occupies several pages of the report. Better, more extensive, and more nearly adequate provision for them is demanded. But in what way shall this be effected?

"No fallacy is more fanciful than that the chronic insane can be made to support themselves, or to assist in providing for their own maintenance, and every scheme projected with that view, will only waste more money than it will save.

"It seems to be forgotten by those who advocate such theories, that the insane labour under a nervous disorder, incapacitating them from continued exertion; that the longer the insanity, the greater, as a general rule, that incapacity; that the derangement of mind prevents that degree of thought and attention, necessary properly to execute; that a constant, careful supervision is needed to secure proper results, and that those who exercise this supervision, cannot attend to other duties; and that one active, industrious man would readily himself do the work of at least three of those he has to watch, and do it better.

"Nor should any countenance be given to the plan sometimes proposed of an institution exclusively for the chronic insane.

"The reciprocal influence of the recent and chronic insane is mutually beneficial, and many a recent case has been aided towards restoration by the kind words and gentle deeds of one supposed to be incurable, and the interest thus manifested has added light to the mind, hope to the heart, and restoration from disorder to the bestower of such kindly influence."

Hence the writer of the report advocates an increase of the number of hospitals based upon the same general principles as those which are already in operation.

"These buildings should be neat, plain, free from all unnecessary architectural embellishments and arrangements, strongly and securely built on the most approved and carefully arranged plan, with special adaptation to the purposes of their construction, and throughout the whole course of their erection under the direct supervision of one familiar with all the requirements of the treatment of the insane."

7. The *Dixmont Hospital*, the well-known department for the insane of the *Western Pennsylvania Hospital*, not being yet completed, its number of patients has grown to an excess of its accommodations. "The wards," writes Dr. Reed,

"are intended to accommodate one hundred and thirty patients. *Two hundred and four* now occupy them."

	Men.	Women.	Total.
Patients in hospital, Jan. 1, 1865	85	73	158
Admitted in course of the year	64	57	121
Whole number	149	130	279
Discharged, including deaths	38	37	75
Remaining, Dec. 31, 1865	111	93	204
Of the discharged, there were cured			34
Died			10

"One died exhausted by epileptic convulsions, one of typhoid fever contracted before admission, two of epilepsy, one from the exhaustion of chronic mania, two of enteritis, one of chronic gastritis, and two of old age."

Only thirty-eight of the patients remaining in the hospital at the close of the year were considered curable.

"As in previous years, the patients have enjoyed all the advantages to be derived from out-door exercise and from various occupations and amusements in-door. On several occasions the attendants and patients of the convalescent female ward prepared and presented to the household a series of tableaux, which not only afforded a healthy diversion to those immediately engaged, but were the source of great pleasure to the spectators. The selection of the pieces, the taste displayed in the arrangement, and the manner in which they were rendered, entitled the parties to this public acknowledgment."

8. We take the subjoined statistics from the *U. S. Government Hospital for the Insane*, for the fiscal year ending with the 30th of June, 1865:—

	Men.	Women.	Total.
Patients at the beginning of the year	265	86	351
Admitted in course of the year	479	36	515
Whole number	744	122	866
Discharged, including deaths	576	29	605
Remaining at the end of the year	168	93	261
Of the discharged, there were cured	334	14	348
Died	139	8	147

Died with "chronic organic and functional degeneration of the brain, without complicative or supervenient disease before death, 49; chronic organic and functional degeneration of the brain, with epilepsy, 12; ditto, with apoplexy, 5; with *paralysie générale*, 2; with tumour of the brain, 1; with typhoid fever, 14; with dysentery, 7; with diarrhœa, 1; with phthisis, 7; with albuminuria, 1; with hepatitis, 1; with bilious fever, 1; with pneumonia, 1; with erysipelas, 1; with gangrene of lung, 1; of maniacal exhaustion, 7; inanition, 8; typhoid fever, 12; diarrhœa, 1; dysentery, 2; general paralysis (simple), 2; epilepsy, 4; pneumonia, 1; asphyxia, 1; abscess of liver, 1; malarial exhaustion, 1; moribund on admission, 3."

Patients from the army at the beginning of the year	191
" " " admitted in course of the year	426
" " " remaining at the end of the year	106
Patients from the navy at the beginning of the year	18
" " " admitted in course of the year	10
" " " remaining at the end of the year	14
Rebel prisoners admitted in course of the year	4

The relation held by this hospital towards the military and naval powers during the late civil war, will justify a liberal extract from Dr. Nichols's report.

"The admissions this year, five hundred and twelve altogether, exceeded those of the previous year by six. While the army and navy furnished nearly eighty-three per cent. of the whole admissions, the number of military patients received was twelve less, and the number of civil cases, including rebel prisoners, eighteen more than last year.

"Though the active operations of the war continued through most of the period embraced in this report, it will be seen that it exhibits the commencement of a return towards the old ratios which the military and civil cases bore to each other. The current year will doubtless exhibit a further movement in the same direction. * * *

"It is an equally extraordinary and significant fact that the number of civil cases received into the institution during the four years of the war has exceeded the admissions during an equal preceding period only ten per cent., notwithstanding an estimated increase of the permanent population of the District of one hundred per cent., and two enactments by Congress—one providing for the care in the national hospital, during the war, of all transient insane persons found in the District without the means of self-support, and the other making like provision for the same period for all cases of insanity occurring in any part of the republic among the civil employés of the quartermaster's and commissary's departments of the army.

"This evident diminution in the relative prevalence of insanity in the District accords with the history of the disease throughout the loyal States; and it is thought to show that the mind of the country was raised by the war to a healthier tension and more earnest devotion to healthier objects than was largely the case amid the apathies and self-indulgences of the long-continued peace and material prosperity that preceded the great struggle. Whether or not a kind of mental collapse will follow a return of peace, and be attended with an increase of mental disease, will depend upon circumstances which we cannot pretend to definitely foresee. If it unhappily should, the truth of this theory would be demonstrated beyond a question, and the old notions—doubtless true as observed at other times and under other systems of government—of the effects of violent national struggles upon the psychological condition of the peoples affected by them, entirely reversed as applied to the citizens of the North American republic. It is but a slight license to say that the nation laid down its life to save it; and that the national mind rapidly acquired a firmer strength and a higher tone amid the harrowing incidents of such a gigantic and all-pervading strife and sacrifice, must be accounted one of the most remarkable and interesting events in the mental history of our race! But, after all, the same natural law to which the nation appears to owe an increase of mental strength amid a sudden, vast, and unprecedented expenditure of it, underlies some of the most familiar observations in psychology. The popular idea that weak and indolent minds in civilized society enjoy comparative immunity from derangement, is an erroneous one. All weakness invites disease, while strength repels it; and activity is a condition of strength. There is more insanity among the hinds and drones of mankind than among the Newtons and Websters. The capacity and application of philosophers and statesmen are associated with a strength and tone of the brain and nervous system which not only repel disease, but afford the innervation necessary to the vigour of the bodily functions. There are fewer dyspeptics among scholars than among unlettered men. It is true that poets—a class of most intellectual men—and madmen are thought to be allied; and it may be so. The mental constitution that affects the poetic fervor is not always, perhaps not generally, what is called a well-balanced one. Besides, the frequent exercise of the imagination in the conception of poetic images is apt to develop into inordinate activity a power of the understanding, especially when it is originally in excess, that is most prone to confound the ideal with the real, and thus establish one of the forms of the incipiency of insanity.

"The whole number treated in 1864–65 was eight hundred and sixty-six, against seven hundred and eighty-seven in 1863–64. As the number of admissions was nearly the same in each of the two years, the excess of seventy-nine treated this year was mainly due to the greater number in the house at the beginning of this than at the beginning of the preceding year.

"The proportion of recoveries was somewhat less during the last two than it was in the first two years of the war. The high proportion of incurable cases among the soldiers who have formed so large a moiety of our population during the war, and the payment of bounties for recruits, began at the same time. The relation that those concurrent events bore to each other is obvious. The various

bounties, particularly the large sums paid for recruits during the last year of the rebellion, stimulated the cupidity of recruit and substitute brokers to the exercise of an ingenuity and perseverance, and to achieve a success, in imposing upon the army senility and childhood for vigorous manhood, and imbecility for soundness of understanding, which, had they been displayed in the genuine service of their country, would have commanded the blessings of a heroic patriotism. It was found that recovered soldiers discharged from the hospital and service, and paid off, and left to journey to their homes by themselves, were so frequently the victims, while on their way, of the diabolical arts of 'drugging' and robbery, and then of literal sale as recruits or substitutes, that no such patients were permitted to leave the institution during the last six months of the war, except under the personal protection of friends or officials. The fact that nine natives of Canada were admitted to the hospital during the period under review, while only two were received during its previous history of nine years, affords ground for the suspicion that our political neighbour on the north parted with some of her dependent population at a handsome premium. We could write the current history of several of the large almshouses and municipal institutions for the insane from the declarations of patients received into the hospital during the past year.

"The percentage of mortality this year was large, but, however much we may regret it, it seemed inevitable under the circumstances. Over seventy-two per cent. of the deaths were in cases of chronic insanity, and in three-fifths of the remaining cases the fatal event was due to morbid condition existing at the time of admission. By *inanition*, as an assigned cause of death, is meant the non-assimilation of food in consequence of a peculiar exhaustion of the vital forces. In these cases the mental disorder was not of an active and exhaustive type, and no acute idiopathic disease could be detected. The only exception to our remarkable exemption from local disease consisted in the communication of typhoid fever, with which many soldiers were admitted in the fall and winter, to some of the chronic cases already in the house, who, from defective innervation, offered but little resistance either to the invasion or progress of an asthenic disease, and for a few weeks the fever prevailed considerably in several wards on the male side of the house.

"The population of the hospital at the close of the last government year was less than it had been at any other time for two years previous. This reduction was mainly effected by embracing the favourable opportunity which the return in June of so many of the different organizations of the army to their respective States afforded to send home, in the care of comrades or officers, all recovered men, and most others who had evidently not become insane in the line of duty, and would certainly be properly cared for either by their friends or the local authorities."

Much was done in the course of the year towards the completion of this national hospital. P. E.

ART. XXII.—*Guy's Hospital Reports.* Edited by SAMUEL WILKS, M. D. Third series, vol. xi. London: John Churchill & Sons, 1865. 8vo. pp. 466.

THE present volume of this valuable publication contains twenty original communications, eight lithographic plates, and a number of wood-cuts. As has been for some time past our practice, we shall lay before our readers a full analysis of its contents:—

I. *On the Value of the Study of Morbid Anatomy.* By SAMUEL WILKS, M. D. The object of this paper is to set forth some of the principal facts taught by the study of morbid Anatomy, and also what may be hoped from further investigations.

The difference between health and disease, says one of the most instructive of modern writers in our profession, consists in the deficiency, that is, the tem-

porary or permanent subtraction, of substance or power, and not in its unwonted increase. Pathological phenomena, he says, are the deformed remains of the normal vitality. (*Lectures Chiefly Clinical*. p. 604.) The same writer elsewhere declares his belief that "in no way is both the science and the art of healing so likely to be improved, as by the association in its literature, and through that in the minds of its practitioners, of pathology with physiology rather than with morbid anatomy; that juster theoretical views are elicited by looking upon disease as part of the phenomena of life than as the producer of appearances after death; and that patients are more likely to be cured by one, however original observer or reader, who is considering even imperfectly the vital actions exhibited by them, than if he knew exactly what would be the consequences of the disease in the corpse." (*Digestion and its Derangements*, p. 3.)

We do not know whose patients fare the best, those of Dr. Chambers or those of the zealous and enthusiastic student of morbid anatomy whose paper is before us. At all events, so far as their therapeutical views are concerned, they are not in discord. Reasoning, the one from cause to effect, the other from the effect to the cause, they both have reached very similar conclusions. "The changes which are met with in the dead body," says Dr. Wilks, "as affecting the viscera or tissues, are of a degenerative kind, whether we make use of the naked eye or employ the microscope for their elucidation." He believes, moreover, that particular tissues can only undergo particular changes; for instance, that the sole organic change to which the lungs are liable, is the production of a single cell-growth, as in pneumonia, or to a vitiated cell-growth, as in tubercle. Other changes found in organs are due to the seeds of disease being brought there through the circulation. When, for example, an abscess is formed in the lung, it is always a secondary and never a primary process; the blood is diseased, and the source of contamination will be found elsewhere in the body. What are the morbid changes peculiar and essential to the different tissues of the body, and what are foreign to them, must be shown by further study.

It is extremely gratifying to find those theoretical views, which we believe to be the basis of correct medical practice, supported by the conclusions of so thorough a morbid anatomist as Dr. Wilks.

II. *Additional Cases of Supra-renal Disease, with Remarks.* By SAMUEL WILKS, M. D.

In the number of this journal for January, 1863, we gave a review of a paper by Dr. Wilks on the *Morbus Addisonii*, which was continued in volume VIII. of the *Reports*. The present paper contains the histories of eight additional cases of this disease. Dr. Wilks still asserts that the disease of the capsules in morbus Addisonii is uniform and peculiar; that none other than this has yet been found in connection with the symptoms which Addison described, and none other which has been satisfactorily proved to be the sole cause of death.

III. *Cases of Enlarged Spleen, with Remarks on the Operation for its Removal.* By SAMUEL WILKS, M. D.

Having found in certain cases, where death occurred from impoverishment of the blood, at *post-mortem* examination, no disease in the body, except that the spleen was hypertrophied, Dr. Wilks considers it very clear that death was induced by the state of the spleen. As this organ may be removed with impunity from the lower animals, and as the human subject is said to have survived its removal by accident, he believes that the surgeon is at times justified in extirpating the organ.

IV. *Report on Lardaceous Disease.* By SAMUEL WILKS, M. D.

The chemistry and pathology of lardaceous disease have had much attention bestowed upon them during the past few years. That it is amyloid degeneration, as is taught by Virchow, is completely disproved, in our opinion, by the researches of Dr. Parry noticed in the number of this journal for April of the past year (p. 459). Lardaceous deposit is certainly a nitrogenized material.

A paper by Dr. Wilks, published in the *Reports* for 1856, contains an account of thirty-six cases of the disease under consideration; he now offers a further list of sixty cases that have occurred at Guy's Hospital during the past nine

years. The whole series, containing ninety-six examples, proves indisputably that the disease is one implying a long-standing and deep-seated cachexia, and which is seen in its most intense form after a protracted caries and necrosis of the bone, which has had its origin in tuberculosis or syphilis. If no affection of the osseous system be present, the lardaceous disease is associated with tubercle in other parts of the body.

V. *Cases of Enlargement of the Lymphatic Glands and Spleen (or, Hodgkin's Disease), with Remarks.* By Samuel Wilks, M. D.

The cases described in this paper have certain affinities with the lardaceous disease, but Dr. Wilks believes them "to possess sufficient peculiarity to warrant their standing alone." They are mainly characterized by an enormous enlargement of the lymphatic glands throughout the body, with a peculiar white deposit in the spleen; the liver may contain similar deposits, and of late these have been discovered in other viscera. The lymphatic glands are large, firm, and translucent; showing under the microscope an abundance of cells scarcely distinguishable from the normal secreting bodies, and with more or less fibre-tissue. In the liver the material is much tougher and fibre-nucleated; whilst in the spleen, lungs, and kidneys, it is composed mostly of cells resembling somewhat those of tubercle.

As regards its degree of malignancy, this disease appears to take a place between cancer and tubercle; the growth in the glands with implication of the bronchial tubes and pulmonary tissue, resembling the former, whilst the mode of deposit in the splenic corpuscles and along the minute vessels of the portal system of the liver resembles tubercle.

The cases here given are fifteen in number.

VI. *Clinical Report on Diseases of the Testicle.* By Thomas Bryant.

This paper is one of very considerable length, occupying nearly eighty pages. It treats not only of diseases of the gland itself, but also of some of the enveloping tunica vaginalis, and of the spermatic cord. Although a good paper, it contains little calling for special remark. It may be new to some to find an India-rubber bag recommended for exercising pressure on a swollen testicle, in place of strapping with adhesive strips. It is to be noticed also that in operating for the radical cure of hydrocele, Mr. Bryant prefers the practice of injecting a mixture of the compound tincture of iodine, with a like quantity of water, to the introduction of setons, which of late has been warmly praised. Influenced by what we had read of the advantages to be derived from the introduction of a seton of silver wire, we once tried it, but shall never be tempted to repeat it.

A table, calculated to prove useful, of the diagnostic symptoms of chronic tumours of the testis is appended to this paper.

VII. *The Stereoscope, and Stereoscopic Results.* By Joseph Towne. (Section vi.)

In this section, Mr. Towne enters into a careful analysis of the experiments upon which Professor Wheatstone supports his stereoscopic theory, and brings forward a series of additional experiments, that exhibits the result of the stereoscope, and have a direct bearing upon the physiology of binocular vision. His paper is illustrated by two lithographic plates.

VIII. *On Cystic or Hydatiniform Disease of the Chorion.* By J. Braxton Hicks, M. D.

An hydatid mole is formed by the dilatation into cysts of the small villi of the chorion. Upon this all anatomists are agreed. The origin of the smaller growths found hanging from the other cysts is still a matter of dispute. Dr. Hicks supports the opinion, which we believe to be the correct one, that these are not only cysts growing from parent cysts, but merely "continuation of the growth after the normal type at first." These are not formations, therefore, to be considered as examples of "proliferous cysts," where one cyst is developed as the progeny of another cyst. This paper is illustrated by two lithographic plates.

IX. *Several Cases of Abdominal Tumour.* By S. O. HABERSHON, M. D.

The cases related in this paper are as follows:—

CASE 1. *Disease of the appendix cœci; suppuration in the centre of the ilium and in the course of the psoas and iliacus muscles; opening below Poupart's ligament; extension to the diaphragm; acute empyema.*

CASE 2. *Cancerous disease of the colon and duodenum; ascites; jaundice.*

CASE 3. *Cancerous disease of the liver; enormous enlargement; scarcely any jaundice; simple chronic ulcer in the duodenum; infiltration of bronchial glands at the root of the lungs.*

CASE 4. *Extensive cancerous disease of the stomach and liver; no vomiting.*

CASE 5. *Abdominal tumour in the right loin; calculus in the kidney; chronic pyelitis for about fifty years; cancerous disease of the kidney; extension through the diaphragm; death from acute pleuro-pneumonia.*

These cases are all extremely interesting and instructive, on account of the obscurity of the diagnosis and of many important pathological facts in their histories.

X. *Clinical Remarks on Diseases of the Skin.* By S. O. HABERSHON, M. D.

This is a good practical paper, one eminently qualified to aid in the treatment of a class of cases that often cause great annoyance and much suffering.

All diseases of the skin are thus arranged by Dr. Habershon:—

"I. LOCAL DISEASES.

1. *Animal parasites*—
   - Scabies, from *Sarcoptes hominis.*
   - Prurigo, from pediculi, &c. &c.

   Vegetable parasites—
   - Tinea favosa, from *Achorion Schönleinii.*
   - Tinea tonsurans, from *Trichophyton tonsurans.*
   - Herpes circinatus, " "
   - Tinea decalvans, from *Microsporon audouini.*
   - Sycosis, from *Microsporon mentagrophytes.*
   - Pityriasis versicolor, from *Microsporon furfur.*
2. *Changes of individual structures.*
   - Pigment in ephelis, lentigo, vitiligo, leucoderma.
   - Sebaceous glands, in acne, molluscum, comedo, strophulus albidus.
   - Sweat glands, in miliaria, sudamina, &c.
   - Papillæ, in warts.
   - Lymphatics, in Barbadoes leg, elephantiasis.
   - Fibro-cellular tissue, in keloid and scleroma.
3. *Local inflammation of the skin.*
   - Erythema, as intertrigo, erythema læve.
   - Dermatitis.

"II. CONSTITUTIONAL DISEASE of a Strumous kind?

1. *Eczematous*, lichen, eczema, impetigo, pityriasis, or papular, vesicular, pustular, and scaly forms of eczema.
2. *Leprous*, ordinary lepra and psoriasis.
3. *Strumous*, in erythematous and furunculoid forms, and lupus.

"III. EXANTHEMS—acute blood changes.

1. *Contagious*, variola, vaccinia, varicella, rubeola, scarlet fever, typhus and typhoid fevers, erysipelas.
2. *Non-contagious*, erythema, roseola, urticaria, herpes (?), pellagra, frambæsia (?).
3. *From poisons*, mineral, vegetable, and animal, the last comprising pyæmia, glanders, malignant pustule.

"IV. CACHECTIC RASHES:—

1. *Defective general nutrition*, rupia, ecthyma, pemphigus, furunculus, carbuncle, leprosy?
2. *Defective blood conditions*, purpura and scurvy.
3. *Defective nerve supply?* melasma, prurigo senilis, &c.

"V. Syphilitic Eruptions:—
Congenital, erythematous, lichenous, warty, fibroid, rupial, ecthymatous, scaly, tubercular.

"VI. Cancerous Eruptions:—
Epithelioma, cancroid, melanosis, scirrhus.

"VII. Congenital Disease:—
Ichthyosis, moles, nævi."

The practical advantages of the natural arrangement of these diseases are evident. The artificial classification usually adopted, that by Willan and Bateman, is founded upon the elementary appearance presented by the skin during diseased action, and it is a great assistance in forming our diagnosis to remember these divisions. In treatment, however, one such as that just exposed is much to be preferred.

XI. *The Ventilation and Warming of the New Wards, Hunt's House, Guy's Hospital.* By John Charles Steele, M. D.

In the erection of this building several novel principles were introduced with a view to effect a better system of warming and of ventilation than is generally obtained in hospitals. To understand the peculiar arrangements which are said to answer admirably, it is necessary to have the aid of the illustrative drawings by which this paper is accompanied. Contrary to usage, the vitiated air is removed from the wards by a series of flues, situated within a short distance from the floor. These flues empty into a tower, in which a powerful draught is obtained by the waste heat and smoke from furnaces.

XII. *On Vesico- and Recto-Vaginal Fistulæ, and Ruptured Perineum, &c.* By Thomas Bryant.

In this paper Mr. Bryant sets forth the principal practical points to be observed for success in the operations in question, and illustrates them by the histories of a number of cases.

In operating for the relief of vesico-vaginal or recto-vaginal fistula, one of the great difficulties is in obtaining a clean and even raw surface, by an incision around the whole margin of the opening. Every one who has operated knows how exceedingly difficult it is to prevent irregularity and raggedness in this cut. To facilitate this step of the operation, Mr. Bryant advises the use of what he calls a *guide*, which is an instrument shaped somewhat like a fork, with one or more curved prongs, which hold firmly the tissues to be pared away. In the introduction of the sutures he lays particular stress upon the necessity of inserting them at a considerable distance, say half an inch or more from the margin of the wound, of not adapting them too tightly, and of removing them so soon as the wound is healed. After the operation he removes the urine by periodically introducing a catheter, in place of retaining an instrument in the bladder. Opium is given by suppositories, in place of administering it by the mouth.

The points to be attended to in operating for lacerated perineum are thus described:—

"The surgeon having carefully examined the parts, and determined the important question of how much of the lacerated perineum requires closure, should place his patient on her back in the lithotomy position, and map out the portion of the membrane which he intends to remove, with a sharp scalpel.

"He must remember, as a point of primary importance, that the surface of the wound should be *clean and regular*, for it is essential to secure primary union of the two surfaces; the new perineum also, to be of permanent service, must be *firm, strong, and thick;* for if otherwise, the success of the case will be but partial or of little permanence.

"To secure these two objects, a free and clean section of the lacerated perineum is absolutely essential; it cannot be made too smooth, nor can the surfaces to be placed in apposition for union be too broad posteriorly towards the rectum; at least an inch of raw surface is not too much, when it can be secured, the width of the bared surface diminishing slightly towards the anterior portion of the labia. The best plan to obtain these results is to perforate the parts towards

the centre, and, as it were, slit them up with one sweep of a sharp scalpel; the right half of the perineum being first treated, and the left subsequently, the whole area having been mapped out previously by a bistoury.

"This *first* step of the operation having been performed, the second, which is of no less importance, remains to be carried out, and that is the bringing of the parts into apposition and keeping them there by sutures. Wire sutures are probably the best for these purposes, for if they do not cause less irritation than smooth silk, they are at any rate more manageable. Each one should be inserted at least half an inch, or, better still, an inch from the margin of the wound, and brought out at its posterior border close to the vaginal mucous membrane; it should be then reintroduced at a corresponding point on the opposite side, and brought out at a spot similarly situated to the one at which it was introduced. When the recto-vaginal septum or sphincter ani has been lacerated, the introduction of the posterior suture is of critical importance, for it is an essential element of success that this septum should be likewise included and drawn forwards to the raw surface of the perineum by the suture. To secure this end, the suture must be introduced, as already described, at a point situated on a horizontal line passing through this septum; the needle is to be dipped well into the thickness of the tissues, and instead of making its appearance at the posterior margin of the wound, close to the vaginal mucous membrane, is to be made to pass through the thickness of the recto-vaginal septum, and then out of the right buttock, at a point corresponding to the one at which it was inserted in the left side. When this is well done, the wire or silk is buried completely in the tissues, and on being tightened the whole parts are drawn together, as it were towards a centre, corresponding to the anterior portion of the anus and posterior of the perineum. The other anterior sutures may be applied as already directed.

"With respect to the necessity of dividing the sphincter ani in this operation, I will only add that I have not yet met with a case requiring such treatment."

Success in cases of this kind depends greatly upon what are termed small matters, and recovery can only be secured by giving them the care and attention bestowed upon matters of great importance. On this account the histories of sixty patients treated by Mr. Bryant, here recorded in detail, will be found most instructive.

This paper is illustrated by several wood-cuts.

XIII. *Cases and Observations in Medical Jurisprudence.* By ALFRED S. TAYLOR, M. D.

These cases are eight in number, and each of them is particularly interesting.

The first is a case of the poisoning of three children with arsenic in vermin powder. They presented the usual appearances met with in poisoning with arsenic; the vomited matter was mixed with blood, bile, and flakes of mucus, and it deposited a sediment in which there were particles of a white sediment which was proved to be arsenic. The children were not seen for twelve hours after the poison had been taken, and they all recovered under the treatment adopted, which Dr. Taylor declares the best, namely, frequent doses of castor oil, with milk and barley-water, to promote the vomiting and purging.

It is important to notice that though the arsenic was taken at the same time and under the same circumstances, the symptoms varied in the time of commencement, duration, and nature. In one child the symptoms commenced in two hours. These were, according to the parents, sickness and thirst, followed by vomiting; pain in the abdomen came on subsequently, but this symptom did not exist when the boy was first seen by the physician, Mr. Boxall. At this time—that is, twelve hours after taking the poison—there was no pain in the bowels even on pressure, and neither pain nor tenderness at the pit of the stomach. There was also an absence of purging. In the two other children no symptoms of poisoning appeared until after the lapse of five hours. This is an unusually long interval, as the average period, according to Dr. Taylor, before the occurrence of symptoms in cases of acute arsenical poisoning, is from half an hour to an hour. The first symptoms here were vomiting, with pain in the bowels; when Mr. Boxall saw them there was thirst, with nausea, but no vomiting or purging.

The second case is one of death from perforation of the jejunum as a result of disease; the death being apparently a result of violence. Here, but for a careful search made, the peritonitis of which the man died would have been referred to violence sustained during wrestling.

The third case (called *fourth* in the original paper) is one very similar in its details, and in the medico-legal inferences to which it leads. A healthy-looking young man was thrown in a drunken quarrel, and died in twenty-four hours, with abdominal symptoms. In the transverse colon was found a chronic ulcer, that had caused rupture of the intestine, and extravasation, followed by peritonitis and death.

The fourth case is one where a boy was accidentally strangled by his neck-tie, in some machinery. This case corroborates the general medico-legal opinion that complete occlusion of the trachea is attended with immediate insensibility, and that a person may recover in spite of the complete suspension of respiration for one minute.

The fifth case is that of a man who was run over by a light cart. The dresser at the hospital found three ribs fractured, for which a bandage was applied, and the man walked home. He died about 11 o'clock on the same evening. At the autopsy not the slightest bruise could be found externally to indicate which was the injured side. On opening the abdomen, a large quantity of blood was found, that proceeded from the right kidney, which was torn transversely completely in half.

The sixth is a case of poisoning by opium, and the seventh is one of poisoning by belladonna. They are of interest on account of the prevalent opinion as to the antagonistic effects of these substances.

The eighth case illustrates the effects of a large dose of the extract of datura stramonium, and Dr. Taylor takes the opportunity of contrasting the properties of daturia and atropia. Dr. Taylor concludes this instructive paper by some very important considerations upon strychnia both as a medicine and as a poison.

XIV. *Clinical Lectures delivered at Guy's Hospital during the Winter Session*, 1864–5. By. JOHN HILTON. (Arranged for publication by GEORGE EASTES, from notes taken by himself and HENRY DENNE, Mr. Hilton's dressers.)

In his clinical lectures Mr. Hilton pursues the plan of taking up one case, and of entering fully into all the details of its symptoms and treatment, explaining thoroughly the why and wherefore of everything connected with it. This is far more beneficial to the student in our opinion than the plan usually adopted of bringing up a large number of different cases and then making upon each only a few leading remarks.

The cases upon which the present lectures are founded are: fracture of the clavicle; concussion of the brain with depression of bone; strangulated oblique inguinal hernia; irreducible inguinal omental hernia; compound separation of carpal epiphyses of both radii from the shafts of the bones, with tetanus; senile gangrene, and fracture of eleventh dorsal vertebra.

We will only say of these lectures that we have seldom read anything with so much pleasure and instruction.

XV. *Case of Ruptured Popliteal Artery.* By ALFRED POLAND.

This case is one where the popliteal artery was ruptured in a vertical direction, and to a very large extent, without any violence whatever or any other injury; the patient was walking at the time of its occurrence. The only explanation is that the artery was in an atheromatous condition, and thus rendered more easily lacerable. After the amputation of the limb, which was finally necessary in order to save life, the tissues were found in a state of fatty degeneration, and the bones very oily.

Three additional cases treated in the hospital are appended; although meagre in detail, they are interesting.

Mr. Poland's case is accompanied by a coloured lithographic plate, representing the lacerated bloodvessel.

XVI. *Poisoning with Fungi. Fatal Effects of the Amanita Citrina on a Woman and Child.* By ALFRED S. TAYLOR, M. D.

This paper contains the details of two cases of poisoning from eating mushrooms, with remarks upon the symptoms observed in similar cases, and the nature and properties of the poison existing in these noxious vegetables.

XVII. *Cases of Rheumatic Fever, treated for the most part by Mint Water; collected from the Clinical Books of Dr. Gull, with some Remarks on the Natural History of that Disease.* By HENRY G. SUTTON.

These cases are twenty-one in number. They are invested with considerable interest, from the fact that they were treated by such simple means, that they might almost be considered as unassisted by any remedy. It must not be forgotten, however, that rest in bed, a well-regulated diet, and good nursing, are powerful elements in the treatment of any acute disease.

These cases show among other things that the symptoms of rheumatic fever may, unaided by any treatment, entirely abate in five, six, seven, or eight days; that too much importance has been attributed to the use of medicines, and that the best treatment for rheumatic fever has still to be determined.

XVIII. *Four cases of Rheumatic Fever, treated with Mint-Water only.* With remarks by G. OWEN REES, M. D.

These cases, like those in the preceding paper, are reported by Dr. Sutton. Dr. Rees says that for his part, their results have firmly impressed him with the belief that the old plan of treatment consisting in the exhibition of calomel, opium, and antimony, and the free use of colchicum, did great harm, not only by retarding recovery, but by leaving the patient greatly debilitated.

A table is attached to this communication containing forty-one cases of rheumatic fever, containing all the important facts connected with them, in a form very readily to be consulted.

XIX. *Select Clinical Reports* (*Memoir IV.*) By G. H. BARLOW, M. D.

The subject treated in this paper is *cardial obstruction, the result of intra-uterine disease.* In an appropriate case, whose history is given in minute detail, there was febrile disease of the mother before delivery; lividity of the child; subsequent dyspnœa; increase of symptoms about the age of puberty; engorgement of heart, lungs, and liver; dropsy; death from apnœa. At the autopsy, very old pericardial adhesion was found, which had proceeded as far as ossification.

Among some valuable observations upon the therapeutics of cardial affections we wish to call attention to the following, as we have reason to believe that digitalis is given too indiscriminately.

"I would here add, as the result of considerable experience in cardiac disease, that in cases of this class (disease of the mitral valve) where it might be said that the character of the pulse resembles that produced by digitalis, it may be employed with confidence, though always with caution; whereas, in those cases in which the obstruction or regurgitation was distal to the mitral valve, and of which I have adduced aorta disease as the typical instance, digitalis is of little service, and its use attended with much risk; ammonia and senega, with moderate stimulation, being the appropriate remedies."

XX. *A Description of the Appearances of the Human Eye in Health and Disease, as seen by the Ophthalmoscope.* (First Series.) By C. BADER.

This paper treats of the ophthalmoscopic examination necessary in order to determine the shape of the eyeball, or more correctly, the distance of the yellow spot to the point in the eye where the rays coming from an object cross each other; the curvature of the crystalline lens and cornea, and relation of the cornea as to distance from the lens, being supposed to be normal.

An accompanying plate with three figures shows the appearances in the emmetropic, the hypermetropic, and the myopic eye.

We cannot close this notice of another volume of Guy's Hospital Reports without remarking upon the great value of such publications, and expressing the wish that the medical men attached to similar institutions in this country would follow so good an example.

"Wherefore," says Jean Louis Petit in the preface to his treatise of the diseases of the bones, "it is necessary for such as have practised, and continue therein, not to be sparing of their knowledge; but that they either communicate it during their lives, or at least leave it to persons who may publish it after their decease. *Not to do so, is to commit a crime against humanity; it is violating the laws of society, and (to use that expression) dying insolvent.*" W. F. A.

ART. XXIII.—*On the Arrangement of the Muscular Fibres in the Ventricles of the Vertebrate Heart; with Physiological Remarks.* By JAMES BELL PETTIGREW, M. D., Edinburgh, Assistant in the Museum of the Royal College of Surgeons of England, etc. From the Philosophical Transactions, Part III., 1864. London. 4to. pp. 445 to 500.

On the Relation, Structure, and Function, of the Valves of the Vascular System in Vertebrata. By JAMES BELL PETTIGREW, M. D., Edinburgh, etc. Reprinted from the Transactions of the Royal Society of Edinburgh, Vol. XXIII., Part III. Edinburgh. 4to. pp. 761 to 805.

THE principal part of the first of these papers was presented to the Royal Society of London in November, 1859, and formed the subject of the Croonian Lecture for 1860. It consists of four parts or sections, the first of which treats of the anatomy of the ventricle of the fish; the second of the anatomy of the ventricle of the reptile; while the third and fourth divisions are devoted to the structure of the ventricles of the bird and mammal.

In the summer of 1858, Dr. Pettigrew made numerous dissections of the hearts of many species of fishes, reptiles, birds, and mammals, with the especial object of determining the precise arrangement of the muscular fibres, an arrangement, as he well observes, so unusual and perplexing that it has long been considered as forming a kind of Gordian knot in anatomy. Vesalius, Albinus, Haller, and De Blainville, after making various attempts to unravel this anatomical mystery, confessed their inability to do so. In 1669, Dr. Richard Lower announced, as the result of his investigations, that the external fibres of the ventricles of the mammals proceed in a spiral direction from left to right downwards; while the internal fibres run from left to right upwards. At the apex the fibres are continuous, and form an imperfect figure of 8. Gerdy adopted the opinion of Lower, adding that all the fibres of the heart form loops, the apices of which look towards the apex of the heart. More recently, however, Dr. Duncan, Jr., of Edinburgh, maintained that the ventricular fibres form twisted loops, which look towards both the apex and the base. Senac, in the last, and Dr. John Reid, in the present century, showed that the fibres of the external and internal surfaces of the ventricles are more vertical in direction than the deeper or more central fibres, the latter being more circular.

As the result of his own labours in this field of inquiry, our author presents us with the following summary of the facts which he considers that he has established:—

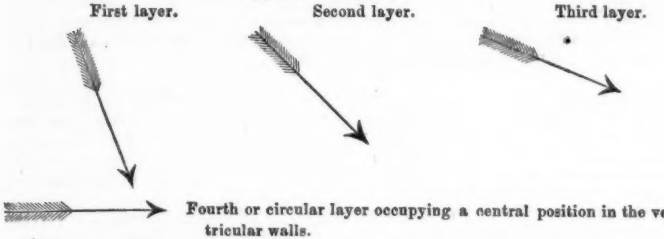
"I. By exercising due care, I have ascertained that the fibres constituting the ventricles are rolled upon each other in such a manner as readily admits of their being separated by dissection into layers or strata, the fibres of each layer being characterized by having a different direction.

"II. These layers owing to the difference in the direction of their fibres, are well marked, and according to my finding, are seven in number—viz., three external, a fourth or central, and three internal.

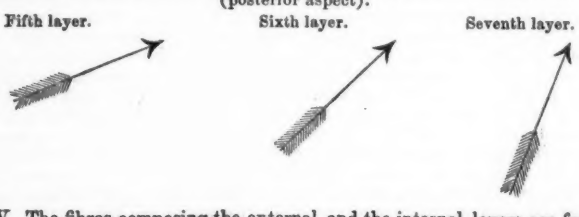
"III. There is a gradational sequence in the direction of the fibres constituting the layers, whereby they are made gradually to change their course from a nearly vertical direction to a horizontal or transverse one, and from the transverse direction, back again to a nearly vertical one. Thus, in dissecting the ventricles from without inwards, the fibres of the first layer, which run in a spiral direction from left to right downwards, are more vertical than those of the second layer, the second than those of the third, the third than those of the fourth—the fibres of the fourth layer having a transverse direction, and running

at nearly right angles to those of the first layer. Passing the fourth layer, which occupies a central position in the ventricular walls and forms the boundary between the external and internal layers, the order of arrangement is reversed, and the fibres of the remaining layers, viz., five, six, and seven, gradually return in an opposite direction, and in an inverse order, to the same relation to the vertical as that maintained by the fibres of the first external layer. This remarkable change in the direction of the fibres constituting the several external and internal layers, which is observed to occur in all parts of the ventricular walls, whether they be viewed anteriorly, posteriorly, or septally, has in part been figured by Senac,[1] and imperfectly described by Reid,[2] but has not, so far as I am aware, been prominently brought forward by any one. A few arrows will illustrate the gradation in direction referred to.

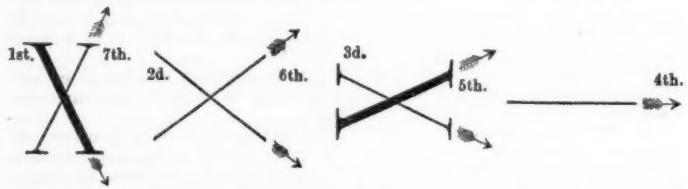
External layers proceeding from left to right downwards of the spectators (posterior aspect).



Internal layers proceeding from right to left upwards of the spectator (posterior aspect).



"IV. The fibres composing the external and the internal layers are found at different depths from the surface, and from the fact of their pursuing opposite courses cross each other—the fibres of the first external and last internal layers crossing with a slight deviation from the vertical, as in the letter X; the succeeding external and internal layers, until the fourth or central layer, which is transverse, is reached crossing at successively wider angles, as may be represented by an ⋈ placed horizontally:—



"V. The fibres composing corresponding external and internal layers, such as layers one and seven, two and six, &c., are continuous in the left ventricle at

[1] Traité de la Structure du Cœur, &c. Paris, 1849.
[2] Cycl. of Anat. and Phys., Article Heart. London, 1839.

the left apex, and in the right ventricle in the track for the anterior coronary artery, the fibres of both ventricles being for the most part continuous likewise at the base.[1]

"VI. From this distribution of the fibres, it follows that the first and seventh layers embrace in their convolutions those immediately beneath them, while these in turn embrace those next in succession, and so on until the central layer is reached—an arrangement which may in part explain, alike, the rolling movements and powerful action of the ventricles.

"VII. The fibres of the right and left ventricles anteriorly and septally are to a certain extent independent of each other; whereas posteriorly many of them are common to both ventricles; *i. e.*, the fibres pass from the one ventricle to the other—an arrangement which induced Winslow[2] to regard the heart as composed of two muscles enveloped in a third. It will be evident from this distribution of the fibres, that while the ventricles are for obvious reasons intimately united, they nevertheless admit of being readily separated.

"VIII. If the hinge-like mass of fibres (common fibres) which unite the right ventricle to the left posteriorly be cut through, and the right ventricle with its portion of the septum detached, the left ventricle will be found to be nearly as complete as it was before the separation took place, and to consist of four sets of conical spiral fibres—two external and two internal sets.

"On the other hand, the right ventricle, and its share of the septum, consists only of conical-shaped spiral fragments of fibres, or at most of flattened rings—a circumstance which, when taken in connection with others to be mentioned presently, has induced me to regard the left ventricle as the typical or complete one, the right ventricle being a mere segment or portion nipped off at some period or other from the left.

"IX. If the right ventricular walls be cut through immediately to the right of the track for the anterior and posterior coronary arteries, so as to detach the right ventricle without disturbing the septum, and the septum be regarded as forming part of the left ventricular wall, it will be found that the fibres from the right side of the septum, at no great depth from the surface, together with the external fibres from the left ventricular wall generally, enter the left apex in two sets; and if their course in the interior be traced, they are observed to issue from the left auriculo-ventricular opening, also in two sets; in other words, the left ventricle is bilateral. I would particularly direct the attention of investigators to this bilateral distribution of the fibres, as it has been hitherto overlooked, and furnishes the clue to the arrangement of the fibres of the left ventricle.

"X. The double entrance of the fibres at the left apex, and their exit in two portions from the auriculo-ventricular opening at the base, are regulated with almost mathematical precision; so that while the one set of fibres invariably enters the apex posteriorly, and issues from the auriculo-ventricular opening anteriorly, the other set as invariably enters the apex anteriorly, and escapes from the auriculo-ventricular opening posteriorly. But for this disposition of the fibres, the apex and the base would have been like the barrel of a pen cut slantingly or lopsided, instead of bilaterally symmetrical as they are.

"XI. The two sets of fibres which constitute the superficial or first external layer of the left ventricle, and which enter the left apex in two separate portions or bundles, are for the most part continuous in the interior with the musculi papillares, to the free ends of which the chordæ tendineæ are attached. These columns occupy different portions of the left ventricular cavity, and give a very good idea of the symmetry which prevails throughout the left ventricular walls.

"Lastly. The apex is opened into and enlarged, and the auriculo-ventricular

---

[1] The late Dr. Duncan, Jr., of Edinburgh, was aware of the fibres forming loops at the base, but seems to have had no knowledge of the continuity being occasioned by the union of the fibres of corresponding external and internal layers, or that these basal loops were prolongations of like loops formed by similar corresponding external and internal layers at the apex—a view which the author believes is here set forth for the first time.

[2] Mémoires de l'Académie Royale des Sciences, 1711, p. 197.

orifice widened, by the removal of consecutive external and internal layers, from the fact of the left ventricular cavity tapering in two directions and forming a double cone."

The subject discussed in the second of these memoirs is of as much importance in a medical as in an anatomical point of view. As the physician in distinguishing between the different organic diseases of the heart is mainly guided by the sounds and impulse, and as the latter phenomena are intimately associated with the action of the auriculo-ventricular and semilunar valves, it is evident that an accurate theory of the manner in which the opening and closure of these valves is affected is of the greatest importance. Unfortunately, however, physiologists are not agreed upon this point. By some it is maintained that during the ventricular systole the valves are floated up by the blood, which, acting upon them from beneath, presses their edges or free margins into close apposition, and causes the segments to occlude completely the auriculo-ventricular orifices. The musculi papillares and carneæ columnæ are supposed to play no part in these movements, while the chordæ tendineæ acting mechanically like so many stays, prevent eversion of the segments in the direction of the auricles. Sir C. Bell, Baumgarten, Hamernjk, and many others, have advocated this view. In the recent work of Dr. Austin Flint, Jr. (*The Physiology of Man*), we find it expressly stated that "the auriculo-ventricular valves are closed by the pressure of blood against them during the ventricular systole." This is, indeed, the generally received opinion. Mayo, Bouillaud, Reid, and others, contend that the closure of these valves is effected not by the blood, but by the musculi papillares, which, in contracting with the other fibres of the ventricles draw the lips or free margins of the segments closely together in the axis of the auriculo-ventricular openings, thus forming two impervious cones, the apices of which project downwards into the cavities of the ventricles. In this view the chordæ tendineæ, which are regarded as the proper tendons of the musculi papillares, are supposed to act as adjusters or adapters of the segments.

The views entertained by Dr. Pettigrew upon this interesting subject are so clearly enunciated in the monograph before us, and appear, withal, to constitute such a truthful exposition of the manner in which the mitral and tricuspid valves are closed, that we transfer to our pages, without hesitation, his own account of the action of these valves.

"In the valvular controversy, as in most others, a certain amount of truth is to be found on either side; and I have to express my conviction, that both theories (conflicting though they appear) are virtually correct as far as they go, but that neither the one nor the other is sufficient of itself to explain the gradual, and to a certain extent self-regulating process, by which the auriculo-ventricular valves are closed and kept closed. On the contrary, I believe that the closure is effected partly by *mechanical* and partly by *vital* means. In other words, that the blood towards the end of the diastole and the beginning of the systole forces the segments in an upward direction, and causes their margins and apices to be so accurately applied to each other as to prevent even the slightest regurgitation; whereas, during the systole, and towards the termination of that act, the valves are by the contraction of the musculi papillares, dragged down by the chordæ tendineæ into the ventricular cavities to form two dependent cones; this downward movement of the segments permitting the blood in the auricles to descend into the ventricles, so as to relieve the congestion of the former.

"Granting that the foregoing hypothesis is correct, there is yet another point *as to the manner of the closure*, to which I am particularly anxious to direct attention, as it is of primary importance, and appears to me, by some unaccountable means, to have hitherto escaped observation. I refer to the spiral form assumed by the blood in the ventricular cavities, which, as has been already partially explained, causes it, towards the end of the diastole and the beginning of the systole, to act in *spiral waves* mechanically on the segments, with the effect of *twisting and wedging them into each other in a spiral upward direction*. I allude, also, to the spiral course pursued by the musculi papillares; these structures, as the systole advances, contracting in such a manner as occasions the spiral descent of the segments into the ventricular cavities, to form

two spiral dependent cones, the apices of which are directed towards the apices of the ventricles. As the decrease of the blood in the ventricles is followed, as has been stated, by a corresponding increase in the auricles; the blood in the latter assists in keeping the free margins and apices of the segments from being everted by the uniform pressure exercised on them by the blood in the former, during the systole. From this account of the closure of the auriculo-ventricular valves, it will be perceived that the valvular segments form two movable partitions or septa, which rise and fall during the action of the heart, in the same way that the diaphragm rises and falls during the respiratory efforts. The advantages arising from such an arrangement are very great. *When the ventricles are full of blood*, and the auricles empty, or comparatively so, the valvular septa are convex towards the base of the heart, and protrude into the auricular cavities. When, however, *the auricles are full of blood*, and the ventricles all but drained of it, the valvular septa descend so as to protrude in a downward or opposite direction. Certain portions, therefore, of the auriculo-ventricular cavities are common alike to the auricles and to the ventricles; and it is important to note this fact, as the valvular septa by their rising and falling, at one time increase the size of the ventricular cavities while they diminish the auricular ones, and *vice versa*. The principal object gained by the descent of the segments into the ventricles is the diminution of the ventricular cavities towards the base; the dependent cones formed by the valves fitting accurately into the conical-shaped interspaces situated between the slanting heads of the musculi papillares and the auriculo-ventricular tendinous rings. As the musculi papillares, on the contraction of the ventricles, mutually embrace and twine round each other, the obliteration of the ventricular cavities is by this arrangement rendered very complete. 'That the ventricles empty themselves during the systole, is rendered probable from analogy, for on watching the hearts of cold-blood animals, they are found towards the end of the contractile act to become quite pale, not, as Harvey supposed, from the blood being pressed out of the parietes, but from the blood in their cavities seen through their transparent sides being almost entirely expelled.' An important inference to be deduced from the spiral nature of the ventricular fibres and ventricular cavities and *the undoubted spiral action of the auriculo-ventricular valves* is the effect produced on the blood as it leaves the ventricles, that fluid being unquestionably projected by a wringing or twisting movement, which communicates to it *a gliding spiral motion*. This view is favoured by the spiral inclination of the sinuses of VALSALVA to each other, these structures gradually introducing the blood so projected into the vessels. How far the rotatory movement referred to extends into the arteries is difficult to determine; but when the smooth cylindrical nature of the vessels, and the great velocity and force with which the blood travels, is taken into account, there is every reason to suppose that the distance is considerable."

Dr. Pettigrew next advances weighty reasons to prove that neither the theory which attributes the closure of the auriculo-ventricular valves to the mechanical floating up of the segments from beneath by the blood forced by the auricles into the ventricles, distending equally in all directions—or that which ascribes it entirely to the contraction of the musculi papillares are either of them adequate to explain all the phenomena. He then states that "one complete closure of the mitral or bicuspid valve" may be briefly described as follows:—

"The segments are first floated gently and gradually upwards, by the uniform expansion of the blood forced into the left ventricle, during the diastole, by the contraction of the left auricle. *This is a purely mechanical act, and during its performance the valve, and chordæ tendineæ, are entirely passive.* When, however, the ventricle suddenly contracts, the margins of the valve, which were in apposition, although not in actual contact, are rapidly approximated (the left auriculo-ventricular opening being instantly closed[1]); and the two spiral columns of blood set suddenly in motion by the ventricular systole, *force the segments of the valve, in an upward spiral direction, rendering them more and more tense, until they reach the level of the ventricular orifice; at which point they are*

[1] Regurgitation is prevented in the inverse of the rapidity with which the closure takes place.

twisted and wedged into each other; the chordæ tendineæ limiting the amount of upward motion, to prevent retroversion and regurgitation. As, however, the blood finds its way through the aorta, which it does the instant the segments of the valve are screwed home,[1] *the segments gradually but rapidly descend in an opposite direction to that by which they ascended, their descent being occasioned, regulated, and minutely graduated by the contraction of the musculi papillares, aided by the chordæ tendineæ and by the ascending spiral columns of blood;* an arrangement which insures that the delicate margins of the segments are always closely and accurately applied to each other; for the chordæ tendineæ and the blood in the auricles acting from above, while the spiral columns of blood in the ventricles act from beneath, the delicate margins in question are effectually prevented from falling towards the ventriculur walls.[2] This downward action of the valve, musculi papillares, and chordæ tendineæ, which is of essential importance in adapting the former to the diminishing condition of the left auriculo-ventricular orifice and ventricular cavity, continues until the blood is completely ejected, and the segments of the valve are twisted or plaited into each other to form a dependent spiral cone, whose apex is directed towards the apex of the ventricle. By the time this happens, *i. e.*, by the time the blood is ejected from the ventricle, and the cone in question fairly formed, the left auricle is distended; and due advantage being taken of the extra space afforded by the descent of the valve, the blood assumes a spiral and conical or wedge-shaped form, which is the best possible for pushing aside the segments, already in the most favourable position for falling away from the ventricular axis, towards the ventricular walls. The same phenomena are repeated with unerring regularity, with each succeeding action of the heart. What has been said of the manner of closure of the mitral or bicuspid valve, applies, I need scarcely add, with slight modifications to the tricuspid."

J. A. M.

ART. XXIV.—*A Practical Essay on the Use of the Nitrate of Silver in the Treatment of Inflammation, Wounds, and Ulcers.* By JOHN HIGGINBOTTOM, F. R. S., Hon. Fellow of the Royal College of Surgeons of England. Third edition, much improved. John Churchill & Sons, London, 1865. 8vo. pp. 172.

ABOUT the year 1820, Mr. Higginbottom applied, as an experiment, a stick of nitrate of silver to the moist surface of an irritable ulcer on the ulnar side of the third finger of his left hand. A hard black eschar formed which dropped off at the end of six days, leaving the wound healed. The result of this trial induced him to further observe the effects of the substance under analogous circumstances. On the first of January, 1826, he published "An Essay on the Application of the Lunar Caustic in the Treatment of certain Wounds and Ulcers," which embraced the knowledge he had acquired on the subject up to that time. Three years subsequently a second edition was published; but the name nitrate of silver was substituted for lunar caustic, because the author believed that the substance possesses "a peculiar conservative property rather than a caustic one."

Since the publication of the second edition (1829?) he says: "I have em-

---

[1] When the segments of the mitral valve are screwed home, the whole force of the ventricular contraction is expended in raising the aortic semilunar valve, and until the screwing home has taken place, the latter action is impossible, as the ventricle up to this point is compressible.

[2] The serious results which might arise from the segments of the valve falling towards the ventricular walls, or away from the axis of the cavity, is especially prevented by the attachments of the chordæ tendineæ; the principal and more internal chordæ tendineæ being, as I have shown, attached to the backs or more external surfaces of the segments, an arrangement which makes their rapid approximation towards the ventricular axis inevitable.

ployed the remedy daily, and can conscientiously declare that its value has daily increased in my estimation, and that, unlike most remedies proposed by the ardent inquirer in medicine and surgery, it has borne the test of experience in many other hands, as well as my own." He believes that nitrate of silver is more extensively used in America than in England.

This third edition of the work is dated at Nottingham (England), July 13, 1865, about thirty-six years after the issue of the second.

Mr. Higginbottom complains that "from erroneous views, promulgated in medical and surgical manuals, by different lecturers and authors, totally at variance with the plain, common sense directions and principles laid down in my work," the free use and general adoption of the nitrate of silver have been impeded. An early and great hindrance to its use was a prevalent but erroneous notion that it was a caustic in the ordinary acceptation of the term. He says, "the nitrate of silver is not a caustic in any sense of the word. It subdues inflammation, and induces resolution and the healing process. It preserves rather than destroys the part to which it is applied, even where the skin would inevitably slough but for the extraordinary preservative power of this remedy." Compared with potassa, "we find that hydrate of potassa destroys, and induces a slough, and the ulcerative process; but if we apply to a part the nitrate of silver, the eschar remains adherent for a time, and then falls off, leaving the subjacent parts healed. If an ulcerated surface, secreting pus, be passed over by the nitrate of silver, the purulent discharge is immediately converted into serum; it is the property of the hydrate of potassa, on the contrary, to induce ulceration and suppuration. In short, the peculiar properties of the nitrate of silver have long been concealed by its being thought a caustic, a destructive agent, and being called lunar caustic, affording the most striking instance of the influence of a term or of a classification upon the human mind.

"The nitrate of silver and the hydrate of potassa (as indeed all caustics) are as the poles to each other—the first *preserves*, the second *destroys*. The first induces cicatrization, the second ulceration."

It has been objected to the application of nitrate of silver in erysipelas that, being a constitutional disease, it might cause metastasis, or a determination of the inflammation to internal organs. On this point Mr. Higginbottom says, "I have never entertained such an opinion, nor have I, during more than forty years' experience, seen a single instance, either in erysipelas or any other inflammation, where the application has produced any untoward effects."

He urges that deviations from his method of applying nitrate of silver have hindered its general use. He says: "The proper and simple direction I have given, is: To apply the nitrate of silver over the *whole* of the inflamed surface, and beyond it on the healthy skin; and should the inflammation still spread, to repeat the application until it is quite subdued. This method of treatment has always been successful.

"The other error is in applying the nitrate of silver on the inflamed surface only, neglecting to apply it on the surrounding healthy skin, or to re-apply it when the inflammation spreads."

Notwithstanding that he has been referred to as authority for employing weak solutions of different strengths, he declares: "I have never recommended or used a weak solution in external inflammation, but, as afterwards stated, a concentrated solution of one hundred and sixty grains to one ounce of distilled water." Weak solutions are inefficient to arrest erysipelas, "but quite sufficient to bring the remedy into discredit."

Mr. Higginbottom considers it very important to call the "attention of surgeons to the superiority of the ordinary stick of the nitrate of silver over the new preparation, which has been now used for some time. The new preparation, 'lunar caustic points perfectly tough,' is worthless as an application in surgical cases. "It is not nearly so soluble as the old brittle stick of nitrate of silver, and while possessing scarcely any power to check and subdue inflammation, is quite useless in the cure of wounds. The same remarks apply to the cake and crystals of the nitrate of silver used for photographic purposes, which, although they may be chemically purer, are much less efficacious for surgical purposes than the old preparation."

Mr. Higginbottom claims that until he called attention to it in the year 1829, the influence of this agent in subduing inflammatory action had not been noticed by surgical writers, nor had its unexpected and extraordinary powers been ascertained. This claim seems to be generally conceded by leading writers on materia medica, although all do not concur in his opinion of the value of its application under all the circumstances and conditions for which he confidently recommends it.

His description of his method of using nitrate of silver we copy for the reason that his work may not be reprinted here, and it affords a fair specimen of his style and manner of treating the subject.

"After so many years' additional experience in the use of the nitrate of silver in the treatment of inflammation, wounds, and ulcers, I am anxious to give full and particular directions for its use; for the proper mode of applying this remedy is quite essential to procure its good effect.

"There is no form of acute superficial inflammation, arising from constitutional or mechanical causes, in which the nitrate of silver may not be applied with great safety and advantage. For many years I have used the nitrate of silver, in solution, in proportion as follows, prepared immediately before using it: ℞. Argenti nitratis ℈iv; aquæ destillatæ ℥iv.

"I find the above concentrated solution more convenient for application when it has to be used on a considerable surface, as in erysipelas, &c. It may be applied with a small piece of linen attached to a little stick. It is not only useful for external use, but for application to internal parts of the throat, &c. Precaution should be taken to renew the linen after it has once been used.

"When the solid form of the nitrate of silver is used, it is necessary to moisten the surface to which it is to be applied slightly with pure water, and apply a long stick of the nitrate of silver *flat* upon the moistened surface, taking care that it be applied to every affected part.

"It is necessary for the successful application of the nitrate of silver, that the surface of the skin be free from oleaginous matter, loose cuticle, or any other extraneous substance. The parts should be well washed with soap and water, and afterwards with water alone, to remove any particle of soap remaining, as the soap would decompose the nitrate of silver.

"It is very essential to know the precise effect of the nitrate of silver in the different degrees of its application.

"In some cases of slight external inflammation it is sufficient merely to blacken the cuticle. How this apparently simple process acts in subduing the inflammatory action, I am quite at a loss to determine. But it is my object simply to ascertain and state practical facts. It is plain, however, that a chemical union takes place between the metallic salt and the animal substance, by which its pores are obliterated, and the action of the external air excluded. In other cases the nitrate of silver must be applied more or less freely, according to the degree of inflammation, as follows:—

"The nitrate of silver, either in solution or the stick, may be passed once, twice, thrice, or more times, according to the degree of inflammation; once in slight cases, twice or thrice in common cases, and more frequently on the spots where the inflammation is most intense. On these parts I have applied the stick after the concentrated solution, so as to have the full effect of the remedy. It is necessary to apply the nitrate of silver more on the hand, or sole of the foot, where the cuticle is thick, than on other parts. After the application the part is to be exposed to the air to dry, and is to be kept cool.

"In twenty-four hours, if the nitrate of silver has been properly applied, it will be frequently observed that the inflammation has subsided, and its progress been checked; but if there be an inflamed spot left untouched, the patient will complain of it. To every such spot the nitrate of silver must be applied. At this period there is often a little vesication, which is to be disregarded.

"On the third day there is usually more vesication and less swelling, and the patient complains of a little pain, as of a blister; but on pressure the part has a puffy feeling, and is found quite free from inflammation.

"On the fourth day the vesications begin to disappear. It is best to leave them undisturbed, for the dried exudation and cuticle defend the subjacent cutis.

"On the fifth day the vesicated crusts separate, leaving the subjacent parts free from soreness and inflammation. It is sometimes several days before the whole of these crusts peel off; but it is best to leave them undisturbed."

After many experiments, Mr. Higginbottom adopted the following plan of treating old ulcers of the legs:—

"A patient presents himself with one or more ulcers of the leg, with a dark or purplish surface, deep and hardened edges, fetid smell, attended with inflammation covering perhaps a great part of the leg, with enlargement of the vena saphena, sometimes œdema of the foot—having perhaps not experienced a good night's rest for years—the pain, heat, and itching sensation being dreadfully distressing to him, and his health altogether being much impaired. He is obliged, perhaps, to follow his daily avocation—often in those cases laborious—and in this way may have dragged on a miserable existence for years.

"The first thing I direct my patient to do in such a case is to apply a common bread-and-water poultice, and afterwards to keep it constantly damp with a little cold water, to remain in bed for eighteen or twenty-four hours to allow any swelling of the leg to subside, and to take a dose of aperient medicine; the leg after this to be washed well with soap and water, to free it from any oleaginous substance or loose cuticle; it is then to be wiped dry with a towel. The inflamed part is to be moistened with *soft* water, and the nitrate of silver passed twice over it, and a little beyond it on the healthy skin, and then applied more freely to every part of the ulcer, particularly the edges and skin immediately surrounding.

"A piece of lint is to be put over the ulcers, and linen, spread tolerably thick with neutral ointment,[1] over the whole inflamed and ulcerated parts; a compress of linen and a common calico roller are last of all to be applied, the latter not too tight, but sufficiently so to retain the dressings in their place.

"The patient is obliged to remain a few hours in bed, on account of the pain occasioned by the application of the nitrate of silver; but after this has once subsided, he enjoys more relief than from any other application, and sleeps soundly all night for the first time perhaps for years. The dressings are to be taken off at the expiration of the fourth day, when the inflammation will be found to have nearly subsided, and the ulcer to have a more healthy appearance. If any of the plasters adhere, they may remain until the time of the next dressing. The applications on the ulcer itself are easily removed, as there is usually a free discharge of lymph from its surface, and the neutral ointment is but very slightly adhesive. It will be also observed that there is not the least fetor, owing to the antiseptic property of the nitrate of silver, as it quite prevents the putrefactive process.

"Another dressing similar to the one before may be applied, and this may remain for four days, by which time the sore will usually present a thoroughly healthy character."

This volume, especially when considered in connection with the professional age of the author, is a valuable contribution to medical literature. But it would have been still more valuable had it included also a full account of the internal uses to which nitrate of silver has been applied.

In this work, which embodies more than forty years of the author's experience, Mr. Higginbottom endeavours to establish the following conclusions, and in their support he adduces one hundred and four cases:—

---

[1] "*Kirkland's Neutral Ointment.*—℞. Emp. plumbi ℥vj; olei olivæ ℥iij; creta ppt. ℥ivss; aceti destillati ℥iv. The acetic acid and chalk must be well mixed in a mortar, and the lead plaster and olive oil, previously melted together, are to be added. The whole is then to be stirred together until cool. To be kept under a little water."

"Black lint is a very useful application to small ulcers, where there is but little discharge or suppuration; by its absorbing any secretion, an adherent eschar is formed under it, and the ulcers healed.

"The formula for black lint is as follows: ℞. Argenti nitratis ℥ij; aquæ destillatæ ℥iv. M. fiat solutio. An ounce of fine lint is saturated with this solution, and then exposed in a flat shallow vessel, to dry by evaporation."

"1. Nitrate of silver is not a caustic or corrosive substance, but, on the contrary, possesses a peculiar conservative property, calculated to preserve, and not to destroy, the animal tissue to which it is applied.

2. When an adherent eschar forms over a recent wound, the wound, under ordinary circumstances, invariably heals.

3. The direful effects of punctures from needles, nails, hooks, thorns, bayonets, saws, &c., are totally prevented.

4. In lacerated wounds the consequent irritation and inflammation are prevented or removed.

5. In recent contused wounds the inflammation is subdued, and consequent suppuration and loss of substance prevented.

6. In phlegmonous inflammation the progress of tumefaction and inflammation is arrested, and suppuration often prevented.

7. In simple acute erysipelas the inflammation is immediately arrested, and quite subdued in four days; when affecting the face and scalp, cerebral inflammation is invariably prevented, and delirium ceases.

8. In phlegmonous erysipelas the inflammation is often arrested, and so far subdued as to prevent extensive sloughing of the cellular tissue; or if suppuration takes place, it is similar to phlegmon.

9. In ulcers the inflammation is removed, suppuration modified, and the healing process greatly facilitated. These effects are very apparent in the treatment of phagedenic ulcers.

10. In large incised wounds, where the interrupted suture is used, inflammation and suppuration are prevented, and the wound heals by the first intention.

11. In variola the early pustule is immediately arrested in its progress, and the pitting of smallpox is entirely prevented.

12. In dissection wounds the specific poison is neutralized, and rendered innocuous, so that all danger is prevented.

13. The healing process by the nitrate of silver is generally facilitated when the parts can be exposed to the air." W. S. W. R.

ART. XXV.—*Contributions to Bone and Nerve Surgery.* By J. C. NOTT, M. D., Professor of Surgery in Mobile Medical College. Philadelphia: J. B. Lippincott & Co., 1866. 12mo. pp. 96.

THIS brochure is intended, the author declares in the preface, "simply as a contribution to a department of surgery which has been strangely neglected, and in which there is a remarkable want of medical literature, viz., the *sequelæ* of gunshot and other injuries of bones." "Writers on military surgery," he says, "have well covered the ground of what might be called *primary* and *secondary* surgery; but here they stop, and we are left to grope our way in the dark in *tertiary* surgery. None of them follow up the shattered and diseased bones for months and years and give us well-defined rules by which we are enabled to treat this large class of tedious, painful, and dangerous gunshot sequelæ."

One half of Dr. Nott's essay is devoted to a succinct *résumé* of those general pathological principles and the rules of practice which are taught in systematic treatises as those by which the surgeon should be guided in dealing with traumatic affections of bone and their consequences. The other half contains his own peculiar views, exemplified by cases that have come under his own observation.

The *résumé* of what is taught in systematic treatises is an excellent one. It must be remarked, however, that systematic treatises do not contain many important observations upon osteo-myelitis and contusion of bone, by which the surgery of the osseous system has been much enriched in the past few years.

The peculiar views of the author, contained in Part II., are set forth clearly, and the cases by which they are exemplified are appropriate and instructive.

In consequence of gunshot wounds, in which the bones have been struck or broken, the surgeon often has to deal with chronic osteitis, caries, necrosis,

deformed or voluminous callus, exostoses, and false joint. The presence of foreign bodies, the extreme complication of the fracture, long-continued suppuration, and chronic osteo-myelitis play the chief part in the production of these affections.

Dr. Nott has confined himself almost exclusively to the consideration of the proper treatment of cases of necrosis and of chronic osteitis. The directions given by him for dealing with these troublesome cases are sound, and may be followed with advantage.

As is well known, Dupuytren divides the splinters made by a gunshot wound of a bone into *primary*, *secondary*, and *tertiary*. It is a convenient division, and one generally followed by surgical writers. The primary are those entirely detached at the moment of injury; the secondary, those incompletely detached, still adhering to muscle, tendon, or aponeurosis; the tertiary are those still adherent to the bone, to be detached, if left, by necrosis. (*Clinique Chirurgicale*, tome 2ième, pp. 457 and 586.) All experienced surgeons are agreed that primary splinters should be at once removed, but they differ as to the proper course to pursue in regard to the others. For instance, Dupuytren himself teaches that they should be left; so also do Percy and Larrey; while Guthrie and Baudens advise their removal. Dr. Nott says that in the latter part of the war he adopted a very different practice from that he followed at the beginning, and became much less scrupulous in leaving fragments *in situ*, and was astonished at the manner in which nature would solder them together. The conclusion we reached, from our own experience, was just the contrary.

In the sixteenth volume of the *Memoirs of the Académie de Médecine* (1852) is a memoir by Hutin, Chief Surgeon of the Hôtel des Invalides, which is entitled: "On the Necessity of Extracting Foreign Bodies and Splinters in the Treatment of Gunshot Wounds." It is an admirable memoir, and shows, we think, very clearly, that the elimination of secondary splinters is always painful, often dangerous, and sometimes fatal. While, when immediately extracted, recovery is incomparably more rapid. It may be remarked on this occasion that Dr. Nott believes the climate of the Southern States to be peculiarly favourable to wounds. He feels assured that no experience of the old world can compare, in success (in gunshot fractures) with that of the surgeons of the Southern States, not from any peculiar skill on their part, but from the superiority of the climate. (p. 80.)

Two interesting cases of affection of the nerves—one of neuralgia of the stump after amputation, the other of a neuromatous encysted tumour of immense size—are recorded in an addendum. W. F. A.

ART. XXVI.—*On Wakefulness; with an Introductory Chapter on the Physiology of Sleep.* By WILLIAM A. HAMMOND, M. D., Fellow of the College of Physicians of Philadelphia; Member of the Philadelphia Pathological Society, etc. etc. Philadelphia: J. B. Lippincott & Co., 1866. 12mo. pp. 93.

THE basis of this little volume may be found in an essay "On Sleep and Insomnia," published by the author in the May and June issues of the *New York Medical Journal* of 1865.

Dr. Hammond teaches that "the *immediate* cause of sleep is a diminution of the quantity of blood circulating in the vessels of the brain, and that the *exciting* cause is the necessity which exists that the loss of substance which the brain has undergone, during its state of greatest activity, should be restored." This doctrine, he sustains, by reference to the history of a case, under his observation in 1854, of a man who had lost eighteen square inches of his skull, in whom the scalp was depressed, while asleep, where the bone was absent, and at the instant of waking rose to a higher level. Subsequently he "observed that in young infants the portion of scalp covering the anterior fontanelle was always depressed during sleep, and elevated during wakefulness." In 1860, with a view to ascertain the condition of the cerebral circulation during sleep, he experi-

mented on dogs, by removing portions of skull by the trephine; and quite recently he performed analogous experiments in order to determine the condition of the circulation in the brain under the influence of opium. He refers to records of observations by others in corroboration of his own conclusions; and states that Blumenbach proposed, in a somewhat different form, the theory of sleep now enunciated, but physiologists have not received it with favour.

"But," says Dr. Hammond, "the most philosophical and most carefully digested memoir upon the proximate cause of sleep, which has yet been published, is that of Mr. Durham.[1] Although my own experiments in the same direction, and which will be hereafter detailed, were of prior date, I cheerfully yield all the honour which may attach to the determination of the question under consideration to this gentleman, who has not only worked it out independently, but has anticipated me several years in the publication, besides carrying his researches to a much further point than my own extended."

The pathology, exciting causes, and treatment of wakefulness are discussed in an agreeable and satisfactory manner by the author, and we commend his monograph to the profession as a useful addition to medical literature.

W. S. W. R.

ART. XXVII.—*Annual Report of the Surgeon-General United States Army.* 1865, 8vo. pp. 7. Washington, 1865.

THIS brief but interesting report contains some important statements which we take pleasure in placing before our readers, as showing the efficiency of the medical service during the war and the creditable manner in which our brethren performed all their duties.

"The ample provision for sick and wounded existing at the date of my last Annual Report," the Surgeon-General states, "was increased during the ensuing months until a maximum of (204) two hundred and four General Hospitals, with a capacity of (136.894) one hundred and thirty-six thousand eight hundred and ninety-four beds was reached. Field hospitals, hospital transports and cars, ambulance corps, and the purveying depots, were kept in condition to meet all possible requirements, and General Sherman's army was met at Savannah by four first class sea going steamers, thoroughly equipped as hospital transports, with extra stores and supplies for five thousand beds, should it have become necessary to establish large hospitals upon his line of operations." * * *

"Since April, 1861, there have been appointed (547) five hundred and forty-seven Surgeons and Assistant Surgeons of Volunteers;

"Mustered into service (2109) two thousand one hundred and nine Volunteer Regimental Surgeons, and (3882) three thousand eight hundred and eighty-two Volunteer Regimental Assistant Surgeons;

"Employed as Acting Staff Surgeons (75) seventy-five, as Acting Assistant Surgeons (5532) five thousand five hundred and thirty-two.

"As far as returns have been received, during the war (34) thirty-four officers of the Medical Staff have been killed, or died of wounds received in action, (24) twenty-four wounded, and (188) one hundred and eighty-eight have died from disease or accident incurred in the service; (1) one died in a rebel prison, (6) six of yellow fever. A completed record will increase this number.

"Two hundred and fourteen (214) Surgeons and Assistant Surgeons of Volunteers, reported as supernumerary, have been mustered out." * * *

"The returns of sick and wounded show that of white troops, (1,057,423) one million fifty-seven thousand four hundred and twenty three cases have been treated in General Hospitals alone, from 1861 to July 1, 1865, of which the mortality rate was 8 per cent. In addition to the alphabetical registers of dead,

---

[1] The Physiology of Sleep. By Arthur E. Durham, Guy's Hospital Reports, 3d series, vol. vi., 1860, p. 149.

not yet fully completed, the records of the Medical Department contain (30,000) thirty thousand special reports of the more important forms of surgical injuries, of disease, and of operations. These reports, with statistical data, and a pathological collection numbering (7630) seven thousand six hundred and thirty specimens, furnish a mass of valuable information, which is being rapidly arranged and tabulated as a Medical and Surgical History of the War, for the publication of the first volumes of which an appropriation will be asked.

"In this connection, and as illustrating more in detail the importance of this work, the Army Medical Museum assumes the highest value. By its array of indisputable facts, supported and enriched by full reports, it supplies instruction otherwise unattainable, and preserves for future application the dearly bought experience of four years of war. Apart from its great usefulness, it is also an honourable record of the skill and services of those medical officers whose contributions constitute its value, and whose incentive to these self-imposed labours has been the desire to elevate their profession. A small appropriation has been asked to continue and extend this collection." * * *

"In nearly all sections of the country the health of the troops has been fully equal to that of the preceding years, though military movements of unprecedented magnitude have been pushed to successful termination without regard to seasons. An epidemic of yellow fever prevailed at Newbern, N. C., in September, October, and November, 1864, causing (278) two hundred and seventy-eight deaths among the troops stationed there, of whom (571) five hundred and seventy-one were attacked. The released or exchanged prisoners arriving at Wilmington, N. C., from rebel prisons, suffered from an epidemic of typhoid fever, which, however, was arrested by strict attention to hygienic rules and prompt transfer to northern hospitals. With these exceptions no serious epidemics have appeared, and it is interesting to note that quarantine regulations strictly enforced by military authority, have proven, during the occupation of southern seaports and cities by our troops, to be an absolute protection against the importation of contagious or infectious diseases. In view of the apprehensions entertained in regard to the Asiatic Cholera, now devastating the shores of the Mediterranean, this becomes a significant fact."

The Surgeon-General bears the following generous testimony to the honourable manner in which our professional brethren performed their duties.

"In conclusion, I desire to bear testimony to the ability, courage, and zeal manifested throughout the war by the Officers of the Medical Department under all circumstances and upon all occasions. With hardly an exception they have been actuated by the highest motives of national and professional pride, and the number who have been killed and wounded bears most honourable testimony to their devotion to duty on the field of battle.

"To the Medical Directors of Armies in the Field and of Military Geographical Departments, especial praise is due for the successful execution of their arduous and responsible duties."

ART. XXVIII.—*The Student's Book of Cutaneous Medicine and Diseases of the Skin.* By ERASMUS WILSON, F. R. S. 8vo. pp. 445. New York, 1865: W. Wood & Co.

THE larger work of Mr. Wilson upon diseases of the skin has been pronounced to be far more scientific and practical than any that had previously appeared. We have, unquestionably, other valuable treatises on the cutaneous maladies, but compared with that referred to, they are far inferior as a safe and intelligent guide to the classification, diagnosis, and treatment of these diseases. In the volume before us Mr. Wilson has endeavoured to supply a want long felt in medical literature—a reliable manual of dermatology for the especial use of the student—sufficiently elementary, and at the same time sufficiently clear and accurate to serve as a faithful guide to the study of the more complete and elaborate systematic treatises upon this most important branch of medicine.

The author having, in the preparation of the work before us, brought to the

task the personal experience of years devoted to a careful and cautious study of cutaneous diseases, with a view to determine the soundest principles in respect to their pathology, and the most correct and successful plans for their eradication, is a sufficient guarantee for its satisfactory accomplishment.

For the legitimate purposes of a manual of cutaneous maladies, we know of no work superior to that before us. The author has succeeded in disembarrassing the entire subject of much, if not all the confusion into which it has been for so long a period involved. In all his teachings he is clear and definite—whether in his descriptions of the symptoms peculiar to each form of cutaneous disease, its progress, its pathology, or its proper treatment as derived from the results of clinical experience. His teachings are given, it is true, in bold outline; an outline, however, that may be readily filled up by a more extended course of study, either in the monographs or treatises for which we are indebted to those who have devoted themselves for many years to the investigation of the pathology and therapeutics of the skin, or from clinical lectures especially devoted to an elucidation of these subjects.

Unfortunately, dermatology has been, heretofore, treated as a speciality, apart from the scope of medicine proper; it is in consequence of this, that so little accurate knowledge is to be met with among practitioners generally, in respect to the causation, diagnosis, and treatment of the maladies of the skin; every effort made, therefore, towards restoring to general medicine a most important and frequent class of diseases, such as is done in the present and the other writings of Mr. Wilson, is worthy of all praise.

The necessity of a thorough acquaintance with the physiology of the skin in health, previously to the study of its diseases, is recognized by Mr. Wilson. Consequently, he has preceded the chapters devoted to the consideration of the twenty-two groups into which he arranges the cutaneous affections, by a sketch of the anatomy and physiology of the skin, followed by a chapter on its general pathology, and the classification of its several morbid conditions. D. F. C.

ART. XXIX.—*On the Diseases, Injuries, and Malformations of the Rectum and Anus; with Remarks on Habitual Constipation.* By T. J. ASHTON, formerly Surgeon to the Blenheim Dispensary, etc. etc. With Illustrations. Second American from the Fourth and Revised English Edition. Philadelphia: Henry C. Lea, 1865. 8vo. pp. 287.

IT affords us pleasure to announce the publication of a new edition of the admirable work of Mr. Ashton, which has been thoroughly revised, and further observations and cases added. It is the most complete treatise on the subject accessible to American physicians; and it may be relied on as a safe guide by the practitioner in the treatment of a class of cases of frequent occurrence, and which, when not well managed, are productive of great distress to the patient.

ART. XXX.—*Lectures on the Diseases of Infancy and Childhood.* By CHARLES WEST, M. D., F. R. C. P., Physician to the Hospital for Sick Children. Fourth American from the Fifth Revised and Enlarged English Edition. Philadelphia: Henry C. Lea, 1866. 8vo. pp. 655.

WHEN it is stated that this work has passed through five editions in England, four in this country, and a like number in Germany, and that it has been translated into German, Danish, Dutch, Russian, and French, all commendation of it at this time would be supererogatory. It has now become an established classic in medical literature.

The present edition embodies, the author tells us, the results of 1200 recorded cases, and of nearly 400 post-mortem examinations, collected from between 30,000 and 40,000 children, who, during the past twenty-six years, have been under his care in public and private practice.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *The Functions of the Nucleus.*—A very curious paper has been read before the French Academy by M. Balbiani. This naturalist, so well known for his splendid researches on the infusoria, contends that cells have a sort of vital individuality. They manifest phenomena of movement and sensibility. They are the seat of considerable nutritive activity, and the nucleus is the principal centre of this activity. M. Balbiani alleges that this activity depends upon the existence of canals like those which are in relation with the contractile vesicle of infusoria, and which serve for the distribution of liquids in the interior of their parenchyma. By the discovery of these canals, M. Balbiani believes that he has found the existence of an actual circulation of fluids in the elementary parts of the animal organism. The animal in which he has observed the structures referred to is a myriapod. M. Balbiani's observations will, we imagine, require much corroboration before they are accepted.

2. *Decomposition of Air by the Tissues.*—An essay on this subject was presented to the French Academy at one of its late sittings. The author, M. Demarquay, has examined the atmospheric air in all parts of the organism in the open and closed cavities, and in the normal and diseased conditions of the system. He draws from this investigation the general conclusion that air rapidly undergoes decomposition when in contact with the tissues, oxygen is absorbed and disappears, nitrogen is left unacted on, and carbonic acid is evolved. The influence of each of these constituents of the atmosphere has been carefully examined.—*Lancet*, Feb. 10, 1866.

3. *Production of Animal Heat.*—M. Berthelot advances some views which differ from the theory of Liebig relative to the source of heat in the body. His memoir has been published in the last volume of the *Mémoires de la Société de Biologie*, and may be read with advantage by physiologists. The author thinks that the changes of *hydration* and *dehydration* which organic substances undergo are entirely concerned in the production of heat, and this view he considers of the more importance from the fact that most of the alimentary substances are capable of exhibiting phenomena of this kind. He arranges these substances in three groups—(1) the fatty matters, (2) the carbo-hydrates, and (3) the albuminoid substances. The albuminoid substances are *amides*, and as such give rise to heat by their hydration with decomposition, and their dehydration with combination. The hydrates of carbon (sugar, starch, etc.) produce heat by their decomposition alone, independent of all oxidation. Finally, the neutral fatty matters disengage heat by their decomposition and by simple hydration.—*Ibid.*

4. *Existence of Glycogen in the Tissue of Entozoa.*—In an important paper published in the last number of the *Proceedings of the Royal Society*, MICHAEL FOSTER, M. B., states that he has found glycogen in the substance of the tapeworm and in that of the round worm of the pig (*Ascaris lumbricoides*). The most remarkable fact in connection with this discovery is the circumstance that an animal which lives in a fluid whose especial quality is the conversion of starch into sugar, should, nevertheless, possess the power of amassing glycogen within its own body. There is no sugar-forming ferment in the bodies of the entozoa examined by Mr. Foster. From this fact the writer infers that, if the animal swallows the intestinal juice in which it lives, the sugar-forming ferment contained therein either does not pass through its intestinal wall into its visceral cavity, or, if it does pass, it is at once destroyed. It is evident that the formation of glycogen in the Ascaris takes place under conditions very different from those under which glycogen is deposited in the mammalian liver, since there is a powerful sugar-forming ferment in the latter.—*Lancet*, Feb. 10, 1866.

MATERIA MEDICA AND PHARMACY.

5. *New and Ready Mode of Producing Anæsthesia.*—Dr. B. W. RICHARDSON has been for some years engaged in researches for the production of local anæsthesia. Snow maintained that all narcotics produce anæsthesia by the process of arresting oxidation. Dr. B. has come to the conclusion that arrest of oxidation means arrest of motion, and that anæsthesia in truth means the temporary death of a part, *i. e.*, inertia in the molecules of the part. This led him to the conclusion that Dr. Arnott's plan of using extreme cold was the first true step in the progress of discovery, and that if it could be made easier of application and at the same time could be combined with the use of a narcotic fluid an important advance in therapeutics would necessarily follow. Dr. R. has been for four years engaged in experimenting with a view of demonstrating this. Finally he has devised an apparatus consisting "simply of a graduated bottle for holding ether; through a perforated cork a double tube is inserted, one extremity of the inner part of which goes to the bottom of the bottle. Above the cork a little tube, connected with a hand bellows, pierces the outer part of the double tube, and communicates by means of the outer part, by a small aperture, with the interior of the bottle. The inner tube for delivering the ether runs upwards nearly to the extremity of the outer tube. Now, when the bellows are worked, a double current of air is produced, one current descending and pressing upon the ether forcing it along the inner tube, and the other ascending through the outer tube and playing upon the column of ether as it escapes through the fine jet. By having a series of jets to fit on the lower part of the inner tube, the volume of ether can be moderated at pleasure; and by having a double tube for the admission of air, and two pairs of hand bellows, the volume of ether and of air can be equally increased with pleasure, and with the production of a degree of cold six below zero.

"By this simple apparatus, at any temperature of the day and at any season, the surgeon has thus in his hands a means for producing cold even six degrees below zero; and by directing the spray upon a half-inch test-tube containing water he can produce a column of ice in two minutes at most. Further, by this modification of Siegle's apparatus he can distribute fluids in the form of spray into any of the cavities of the body—into the bladder, for instance, by means of a spray catheter, or into the uterus by an uterine spray catheter.

"When the ether spray thus produced is directed upon the outer skin, the skin is rendered insensible within a minute; but the effects do not end here. So soon as the skin is divided the ether begins to exert on the nervous filaments the double action of cold and of etherization; so that the narcotism can be extended deeply to any desired extent. Pure rectified ether used in this manner is entirely negative; it causes no irritation, and may be applied to a deep wound,

as I shall show, without any danger. I have applied it direct to the mucous membrane of my own eye, after first chilling the ball with the lid closed.

"I have now employed this mode of producing local anæsthesia in four cases on the human subject. The first case was the extraction of a tooth from a lady, the operation being performed by my friend and neighbour Dr. Sedgwick, on January 24th of this year. On the 29th of the same month I used it again on the same lady for the extraction of three very difficult teeth, Dr. Sedgwick again operating. The results were as satisfactory as in the previous case, where the ice and salt ether apparatus was used.

"I have used the apparatus also in connection with my friend Mr. Adams, who had a case at the Great Northern Hospital of deep dissecting abscess in the thigh of a young woman. In the abscess there was a small opening, which just admitted the director. I first narcotized around this opening, and the director being introduced, Mr. Adams carried his bistoury nearly an inch deep and one inch in the line of the director. I then narcotized the deep-seated parts, and enabled him to cut for another inch and a half in the same direction. The director was then placed in the upper line of the abscess, the process was repeated, and the incision was carried two and a half inches in that direction. The patient was entirely unconscious of pain, and after narcotizing the whole of the deep surface, Mr. Adams inserted his fingers and cleared out the wound without creating the slightest evidence of pain.

"Afterwards, in the case of a lacerated wound, six inches long, in the arm of a boy, who had been injured with machinery, I narcotized while six sutures were introduced by Mr. Adams. The first needle was carried through without the anæsthetic, and caused expression of acute pain; the remaining eleven needles, after a few seconds' administration of the ether spray, were passed through painlessly. The twisting of the wire sutures gave no pain.

"These results are so interesting that I make no apology for bringing them at once before my medical brethren. I wish it to be distinctly understood that at the present moment I only introduce the method here described for the production of superficial local anæsthesia. It is, I believe, applicable to a large number of minor operations, for which the more dangerous agent chloroform is now commonly employed—I mean such operations as tooth extraction, tying nævus, tying piles, incising carbuncles, opening abscesses, putting in sutures, removing small tumours, removing the toe-nail, dividing tendons, operating for fistula, removing cancer of the lip, and other similar minor operations which I need not mention. The process may also be applied to reduce local inflammation.

"In course of time, and guided by experience and the advancement of science, we may, however, expect more. If an anæsthetic fluid of negative qualities, as regards irritation of nerve, and which has a boiling point of 75° or 80°, can be obtained from the hydrocarbon series, the deepest anæsthesia may be produced, and even a limb may be amputated by this method. It may also turn out that certain anæsthetics may be added to the ethereal solution with advantage, such as small quantities of chloroform, or some of the narcotic alkaloids, if they could be made soluble in ether. A solution of morphia and atropia combined, if they could be diffused through ether, which at present seems impossible, could thus be brought into action so as to cause deep insensibility. In operating on the extremities it would be good practice to stop the current of warm blood by making pressure above on the main artery.

"Reaction from the anæsthesia is in no degree painful, and hemorrhage is almost entirely controlled during the anæsthesia.

"One or two precautions are necessary. It is essential, in the first place, to use pure rectified ether: methylated ether causes irritation, and chloroform, unless largely diluted with ether—say one part in eight—does the same."—*Med. Times and Gaz.*, Feb. 3, 1866.

—

6. *Anæsthetic and Sedative Properties of Bichloride of Carbon or Chlorocarbon.*—At different times Professor Simpson has inhaled the vapours of various fluids with a view of ascertaining their anæsthetic or other therapeutic properties, but found them inferior to either chloroform or other. Lately he states

(*Med. Times and Gaz.*, Dec. 16, 1865) he has inhaled and used a liquid, the vapour of which seems to him to approach nearer in its quality and effects to chloroform than any other anæsthetic agent. This fluid, the bichloride of carbon or chlorocarbon, is a transparent colourless fluid having an ethereal and sweetish odour, not unlike chloroform. Its specific gravity is great, being as high as 1.56, whilst chloroform is 1.49. It boils at 170° Fahrenheit, the boiling point of chloroform being 141°. The density of its vapour is 5.33, that of chloroform being 4.2.

"Besides trying the anæsthetic effects of bichloride of carbon upon myself and others, I have used it in one or two cases of midwifery and surgery. Its primary effects are very analogous to those of chloroform, but it takes a longer time to produce the same degree of anæsthesia, and generally a longer time to recover from it. Some experiments with it upon mice and rabbits have shown this—two corresponding animals in these experiments being simultaneously exposed under exactly similar circumstances, to the same doses of chloroform and chlorocarbon. But the depressing influence of chlorocarbon upon the heart is greater than that of chloroform; and, consequently, I believe it to be far more dangerous to employ as a general anæsthetic agent. In a case of midwifery in which it was exhibited by my friend and assistant, Dr. Black, and myself, for above an hour, with the usual anæsthetic effects, the pulse latterly became extremely feeble and weak. In another case in which it was exhibited by Dr. Black, the patient, who had taken chloroform several times before, was unaware that the new anæsthetic was different from the old; her pulse continued steady and firm, although she is the subject of valvular disease of the heart. The surgical operations in which I have used chlorocarbon have been, the closure of a vesico-vaginal fistula, the division of the cervix uteri, the enlargement of the orifice of the vagina, and the application of potassa fusa to a large flat nævus upon the chest of a young infant. In all these cases it answered quite well as an anæsthetic. The child did not waken up for more than an hour and a half after the employment of the caustic, which was used so as to produce a large slough. Its pulse was rapid and weak during the greatest degree of anæsthetic sleep. One of the mice exposed to its influence, and which was removed from the tumbler where the experiment upon it was made as soon as the animal fell over, breathed imperfectly for some time after being laid on the table, and then died.

"Chlorocarbon, when applied externally to the skin, acts much less as a stimulant and irritant than chloroform, and will hence, I believe, in all likelihood, be found of use as a local anæsthetic in the composition of sedative liniments.

"In two cases of severe hysteralgia I have injected air loaded with the vapours of chlorocarbon into the vagina. The simplest apparatus for this purpose consists of a common enema syringe, with the nozzle introduced into the vagina, and the other extremity of the apparatus placed an inch or more down into the interior of a four-ounce phial, containing a small quantity—as an ounce or so—of the fluid whose vapour it is wished to inject through the syringe. Both patients were at once temporarily relieved from the pain. The first patient told me her relief at the first application of the anæsthetic vapour was so long that she slept during the following night far more soundly than she had done for weeks previously.

"The injection of the vapour of chlorocarbon into the rectum does not prove so irritating as the vapour of chloroform. In one case it removed speedily pains in the abdomen and back.

"Chloroform vapour applied by sprinkling a few drops on the hand, and held near the eye, is one of the very best and most sedative collyria in some forms of conjunctivitis, ulcerations of the cornea, with photophobia, etc. I have not yet tried the vapour of chlorocarbon, but perhaps it may answer still better, as less irritant, and almost as strongly sedative.

"I have found ten or twenty drops injected subcutaneously by Dr. Wood's syringe repeatedly relieve local pains of the walls of the chest, abdomen, etc., without being followed by the distressing nausea so frequently the result of the hypodermic injection of preparations of opium and morphia.

"Internally I have only hitherto tried it in small doses in gastrodynia, where it has the same effect as swallowing a capsule of chloroform."

7. *Solanum Paniculatum.*—In the *Bulletin Général de Thérapeutique* (Jan. 15th), M. Stanislas Martin describes a new medicinal substance under the title of *jurubeba*, the term applied in Brazil to a plant called by botanists *Solanum paniculatum*. In South America the plant is used in the form of emplastrum, syrup, wine, tincture, and aqueous and alcoholic extract. It is chiefly employed in affections of the liver and spleen, in vesical catarrh, anæmia, chlorosis, and difficult menstruation. According to the testimony of several observers, this new drug promises to be the most powerful deobstruant yet met with. The jurubeba is sold commercially in the state of leaves, fruit, and roots. The latter vary in length from ten to fifty centimetres. They are covered with minute rootlets; their texture is hard and fibrous, the fibres being serrated. The stems of the plant are long and slender, and are studded with sharp-pointed prickles. The leaves attached to them have a fine green colour; they are without odour, and are nearly tasteless.—*Lancet*, Feb. 10, 1866.

8. *Physiological Action of Iron.*—A new theory of the action of iron upon the system has been started by Dr. A. Sasse, in a paper reported in Schmidt's *Jahrbücher*. This *savant* considers that the salts of iron replace, as it were, the blood-globules by acting as carriers of ozone. It is of no importance whether the iron be administered as an oxide, a per-salt, or a proto-salt; for, when once it has entered the circulation, it continually takes up and gives off ozone till it is expelled from the body. Dr. Sasse concludes that we have in iron a means of promoting the process of oxidation; but we should never administer this medicine except in cases where the process of oxidation is not sufficiently energetic. He considers that iron should not be employed in tuberculosis.—*Ibid.*

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

9. *The Polymorphism of Disease.*—It is manifest that living beings, animals, plants, and even chemical bodies, wander considerably from their ideal pristine type; the degree of variation, as the rule, being in direct ratio to the simplicity of organization. At the same time, as a salutary check to ultra interpretations, there is a law of limitation, in virtue of which species preserve each their *essential*, though they may vary as regards *accidental*, features.

The best exemplification of this truth is afforded by components of the vegetable kingdom, the whole of which, as Dr. Hooker truly observed, is pervaded by the element of mutability; and no better illustrations are afforded than by the history of the potato, of wheat, and of garden flowers in general. Analogous instances in the animal kingdom in the lowest forms of life are referred to by Quatrefages in his "Metamorphoses of Animals," and illustrated by the facts of "the alternation of generations." When this theory was first promulged, the word Di-morphism was coined, used timidly, then more frequently and freely, and now has given place to the more correct designation—polymorphism. Very admirable examples are given by De Barry, who has shown that *uredo uromyces*, *puccinia* and *œcidium* are but stages of the same coniomycetous fungus. It would appear also that there are from four to six aspects of pyrenomycetes, and the third volume of Tulasne's "Carpologia" contains similar evidence in his magnificent plates of polymorphism in the entomogenous *spheriæ*, and other allied groups; and as fructification has been regarded as the only real differential test of species in fungi, it is easy to understand that the natural variations of one have been looked upon as separate and distinct kinds of plant. In the mineral kingdom, the same condition is confirmed by the behaviour of certain

crystalline salts. In the animal kingdom, the principle of natural selection interferes somewhat. Many of the various species of acari are thought mere modifications, to be accounted for by the influence of differences of habitat and the like.

No less is polymorphism exhibited in the case of diseased conditions. The instances of intestinal and other entozoa will at once occur to the mind. There is scarcely a disease which has not a considerable range in aspect according to the different degrees of intensity in quality or quantity of the virus, and the state of the living being upon whom it plays; hence the varying character of epidemics—malignant, sthenic, asthenic, fatal, or mild. As the local expressions of disease depend, of course, upon the degree of development of the general condition, variations are met with accordingly, and this is an important consideration at the present time in reference to Rinderpest. It is asserted that the chief objection to the reception of belief in its identity with smallpox exists in the contrasts presented by the eruption in the two cases. Is the affirmative consistent by analogy with what we know of diseases in general? Variola, vaccinia, and cowpox are now admitted to be identical in nature. Bastard vaccinia must be included also; and the French have adduced evidence in support of the view that grease and aphthous stomatitis of horses are modifications of variola; whilst in India the latter, as to its eruption, assumes unusual garbs in man and animals. Puerperal fever may be erysipelatous, gastro-enteric, or malignant. Measles may be mild (as in the East), malignant, abortive, as in Rubeola sine catarrho, or anomalous, as Rubeola notha, and the pseudo-measles of Dr. Salisbury. Scarlatina is peculiarly mild in the puerperic woman in Ireland; and its least expressed form is not unlikely Rosalia. In northern climates leprosy assumes the tubercular, and in India the anæsthetic form by preference; whilst in mid-climes one occasionally observes its least expression, Morphœa, as the total disease. In Scotland Sibbens is its remnant. Syphilis is mild in the East, bad in India; and Radesyge is supposed by Dr. Böeck to be a peculiar phase in Norway. The distinctions of gout, rheumatic gout, and rheumatism are not well defined. Gonorrhœal rheumatism is a puzzle as to its exact relations. Turning, however, to examples that are more immediately appreciable by the eye, and, therefore, not so likely to mislead—viz., eruptions on the surface, we observe the same polymorphism in acute specific diseases; for some early stages may represent the total malady. This opens out the wide question of "abortive forms" to which Dr. Stokes especially directed attention. In typhoid fever we frequently notice certain special characters peculiarly marked, as in the "latent" cases. Erratic and metastatic occurrences are further illustrative. Amongst the more chronic maladies, there is no dearth of examples. Eczema is rarely observed to be vesicular; fissuring, squamation, papulation, or even erythema, may predominate, or a translation of morbid action to the mucous membranes may take place, and alternate with the changes usually noted on the surface. Strophulus in its several forms, and lichen, the whole parasitic group of diseases, and the phases of scabies only confirm what has been said. Age, sex, constitution, texture (*e. g.*, the hairy covering of animals), the transmission through different species, hereditary peculiarities are some of the chief agencies in effecting modification; and in reference to hereditary peculiarities, it is worth noting that in eruptions the local changes are peculiarly well marked and obstinate.

The duty of the scientific man is clearly indicated by the often repeated words of Mr. Bentham in reference to plants—"That neither size nor outline affords any basis for distinction into species until it has been ascertained, from extensive comparison of forms brought from different localities in the widest area over which the species can be traced, what are the average characters of the type and what is their range of variation." The doctrine of polymorphism is an important one to be aware of, since the various influences that play upon the individual differ much at and in different times and places; and whilst close similarities are often produced, it is all the more needful that diseases should be studied in their entire history, and that no one special feature be exalted into undue significance, if we would travel the safest road in the discovery of truth.—*Med. Times and Gaz.*, Jan. 20, 1866.

10. *Medical Statistics.*—CLAUDE BERNARD, in his *Introduction à l'Etude de la Médecine Expérimentale*, just published, gives us his views as to the value of statistics in medicine. The opinions of such a man on such a subject will interest most of us.

There are (he says) political, social, and medical theorists among whom statistics have a sort of mysterious veneration. Everything can be proved by statistics. It is a convenient way of getting rid of troublesome facts and of presenting hypotheses in an imposing form. Thus, when the number of pulsations are measured by an instrument throughout the day, and an average is taken of the varying numbers, "on aura précisément des nombres faux." The figures are exact, the average is an error, for it represents no actual condition. The pulse diminishes during the intervals of fasting, accelerates during digestion, and varies continually according to other influences, such as movement and repose; all these biological peculiarities disappear in the average. In like manner, when averages are struck from calculations respecting secretions, there is a mingling together of the most varying conditions; a secretion which is alkaline at one moment is acid at another; in the average it appears a compound of the two. When a physician collects a number of cases and from them draws up a description which represents the symptoms on an average, he describes that which never existed in nature.

This error of averages is strikingly exhibited in the various theories of food propounded by physiologists. The amount of oxygen, or any other substance, consumed by an animal in one day is estimated and compared with the weight of the animal; but the weight represents a total of various substances with which the oxygen has very various relations, some of them being totally unaltered by the oxygen, others profoundly affected by it. In like manner, a poison is estimated according to the amount required to kill an animal of a certain weight. "Il faudrait pour être plus exact calculer non par kilo du corps de l'animal pris en masse, mais par kilo du sang et de l'élément sur lequel agit le poison." But even then the mere weight tells us little. Other conditions interfere, and these, which vary with the age, size, sex, state of digestion, etc., of the animal, determine the effect of the poison.

Obviously, the first condition of statistical comparison must be that the facts compared are exactly observed and are capable of being reduced to unities comparable with each other. How often is this condition present in medical statistics? Every one familiar with hospitals knows what numerous causes of error have vitiated the reported "cases." Very often the diseases have been named at hazard after a superficial diagnosis; and even when the cases have been carefully examined, no two precisely resemble each other; age, sex, temperament, the complication of other diseases, and a crowd of circumstances interfere; and if this is so with two cases, how much more will it be with a hundred! The average is supposed to eliminate all these differences; but whenever the physician has a case before him, that case is individual, not an average; its peculiarities are not eliminated, yet on its peculiarities must depend the effect of his treatment.

M. Bernard reminds us that it is only when the cause is quite undetermined that any one thinks of applying statistics. No one enumerates cases in which oxygen and hydrogen compose water; no one counts the number of times in which division of a nerve paralyzes its muscles. It is only when the cause is unknown that cases are counted, and then the enumeration throws no light on the conditions. For example: some experiments showed that the anterior roots of the spinal nerves were insensible: other experiments showed that they were sensible; would it have thrown any light on this difficulty to say that the law of sensibility in the spinal roots is that of 25 per 100? Or ought we to invoke "la loi des grands nombres," and say that the roots are as often sensible as insensible? It would be absurd. There is obviously a reason why they are sensible, a reason why they are not, and it is these reasons we are to discover.

A great surgeon performs an operation many times; he then gives a tabular statement of the cases which have been fatal and the cases which have been successful, and statistically concludes that the mortality of this operation is

two in five. What will this tell us respecting the certainty of the next case? We cannot know whether it will be one of the two or one of the three. We ought to know what are the conditions which will range it infallibly under one or the other head. Instead of an idle enumeration, we should make a fruitful study of each special case, and discover, if possible, the cause which renders the operation fatal. The same reasoning applies to curative remedies. A certain remedy has in twenty instances been followed by a cure; in seven instances no cure has been effected. You will say, perhaps, that there is twenty to seven in favour of success. Not in the least. You do not know how many of those twenty patients would have recovered had there been another remedy tried, or no remedy at all; you do not know what was the precise action of the remedy, what changes it effected in the organism, what its effects will be on the organism now about to be submitted to it. As a great mathematician observed. "La loi des grands nombres est toujours vraie en général et fausse en particulier." And as to the "compensations which bring about the law," they are useless in medicine. Mathematicians admit that if a red ball has come up fifty times in succession, that is no reason why the white should come up on the fifty-first; the white ball is certain to come up some time or other, but its appearance depends on specific conditions which have nothing to do with what has gone before.

Is there, then, no utility in statistics? M. Bernard is far from saying so. He admits that statistical results lead to probabilities and suggest research: but he protests against the idea that medicine must be only conjectural. He insists on the necessity for a scientific basis, and declares that every method of treatment which is not grounded on a clear recognition of the causal connections between agents and the organism is mere empiricism, not much removed from charlatanism. "Les médecins en général semblent croire qu'en médecin il y a des lois élastiques et indeterminées. Ce sont là des idées fausses qu'il faut faire disparaître si l'on veut fonder la médecine scientifique. La médecine, en tant que science, a nécessairement des lois qui sont précises et déterminées, qui, comme celles de toutes les sciences, dérivent du critérium expérimental."—*Brit. Medical Journal*, Dec. 16, 1866.

—

11. *Morbid Anatomy and Early Physical Signs of Pneumonia.*—Dr. T. H. WATERS read (Dec. 12, 1865) a paper on this subject before the Royal Medical and Chirurgical Society.

He states that "although the conditions which characterize pneumonic inflammation—engorgement, red hepatization, and gray hepatization—have been accurately described by various pathologists, discrepancy of opinion exists on some points connected with the morbid anatomy of the disease, such as, 1st, the bloodvessels involved in the inflammation; 2d, the particular part of the pulmonary substance which is the seat of the disease. These points can only be cleared up by a careful comparison of the healthy with the pneumonic lung. With regard to the bloodvessels involved in pneumonia, the opinions of pathologists are divided. Some believe that the capillaries of the pulmonary artery are those essentially affected, those of the bronchial arteries being most probably also involved; some consider the bronchial capillaries mainly concerned; while others think it probable that both sets of vessels are simultaneously affected, although perhaps in different degrees. In considering this question it is necessary to examine into the arrangement of the bloodvessels of the lungs, to define clearly the parts to which each set is distributed, and to ascertain the exact portions of the pulmonary substance involved in the pneumonic inflammation. The true respiratory portion of the lungs consists of a series of air sacs situated at the extremity of each bronchial tube. These air-sacs are separated from each other by thin membranous walls. The pulmonary arteries are the only bloodvessels distributed to the air-sacs. These vessels ramify in the walls of the sacs, and form in them the pulmonary plexus. They are engaged not simply in carrying blood for the special function of the lungs, but also for the nourishment of the tissue to which they are distributed. Although the bronchial arteries pass along the bronchial tubes and supply the structures of those tubes and the areolar tissue of the lungs, they send no branches to the walls of the air-sacs,

which are solely occupied by the plexus formed by the pulmonary artery. In speaking of the areolar tissue of the lungs, the author wished it to be distinctly understood that no such tissue is found in the walls of the air-sacs; it is only demonstrable in the adult lung around the bronchial tubes, the larger bloodvessels, and the lobules, as well as beneath the pleura. Such being the distribution of the bloodvessels of the lungs, and the arrangement of the areolar tissue, the next point for consideration is the exact seat of the pneumonic inflammation. On examining, under the dissecting microscope, a piece of inflamed lung which has reached the stage of hepatization, it is at once seen that the seat of the exudation is the air-sacs. These cavities are filled with solid matter; and, if the preparation has been kept in spirit for some time, moulds of the cavities can be drawn out. As the air-sacs are the seat of the exudation, it is obvious that the exudation must be poured out from their walls. The structures composing these walls must, therefore, be the seat of the inflammatory process; and as they contain no other vessels than those derived from the pulmonary artery, it is the branches of this vessel alone which are involved in the disease. In a piece of hepatized lung, exudation is sometimes found in the smaller bronchial tubes; at other times it is absent from them, and merely fills the air-sacs. Its presence in the bronchial tubes by no means proves that it has been poured out from their lining membrane; for it may have passed into the tubes from the air-sacs, being pressed out from the latter as they have become over-distended. In some cases of pneumonia there is no reddening of the mucous membrane of the finest bronchial tubes—no post-mortem appearances to show that there has been anything more than a simple uncomplicated pneumonia; whilst, in other cases, an increased vascularity of the bronchial membrane indicates the concurrent existence of bronchitic inflammation. Some pathologists, in speaking of the morbid anatomy of pneumonia, have described the exudation as taking place, in part, into the interstitial tissue. They have not, however, described accurately what they mean by interstitial tissue; and it is very important that clear notions should exist with reference to this particular point. The author has already mentioned that the lungs are not permeated throughout with areolar tissue, and that it only exists in certain parts, and in small quantities. The true lung-tissue—that which has been known as the parenchyma of the lung—consists of the walls of the air-sacs. These walls are firm and strong, but very thin. They consist of yellow elastic tissue, and a basement membrane, inclosing the pulmonary plexus. No areolar tissue is found in these walls; a fact which the morbid condition produced by pulmonary emphysema fully demonstrates. Although in pneumonia the walls of the air-sacs become somewhat thickened, this is due, the author believes, chiefly to the enlargement of the capillaries which they contain, and only partly to their retaining some of the exudation. Grisolle thinks that in pneumonia the capillaries are very probably augmented in number. It is impossible to decide positively with reference to this point, but the author's opinion is decidedly opposed to that of Grisolle. He believes that no development of new vessels takes place; they increase in size, but not in number. In gray hepatization, the air-sacs are still the seat of the exudation, and no destruction of their walls takes place unless an abscess is formed. There is no interstitial suppuration; the exudation-matters, in the process of cure, are either reabsorbed or expectorated. The following conclusions are drawn from the foregoing facts: 1. That pneumonia consists of an inflammation of the walls of the air-sacs of the lung. 2. That the bloodvessels involved in pneumonia are the branches of the pulmonary artery, which constitute the pulmonary plexus; and that the capillaries of the bronchial arteries are in nowise implicated, unless there be a concurrent bronchitis, which is an addition to the pneumonia, and not an essential part of it. To pass to the second subject of the paper—the early physical signs of pneumonia. The author believes that engorgement is not the first morbid change that takes place in pneumonia, and agrees with Dr. Stokes that there is a prior stage, characterized by a dryness of the pulmonary membrane, and probably intense arterial injection. In proof of the probability of this condition, an appeal is made to the facts furnished by auscultation—viz., the existence of a dry, harsh, loud, respiratory murmur preceding the crepitating rale. Two cases have lately been under the author's care in which the existence

of a loud respiratory murmur was noted as an initial physical sign of pneumonia. In both cases there was acute primary pneumonia coming on in lungs previously healthy."

Dr. C. J. B. Williams said that some thirty years ago he had worked a good deal on the subject connected with the paper, and he was glad that the author confirmed the principal point with regard to the essential seat of pneumonia which he had propounded so long since. This was, that the inflammation essentially occupies the great pulmonary plexus of vessels; and that its occupation of these vessels, through which all the blood of the body has to pass, gives to pneumonia much of its grave character. In fact, from this circumstance pneumonia becomes much more than a local affection—it partakes of the characters of a blood disease; and its symptoms are more constitutional than those of any other local inflammation. Thus in sthenic the whole body is intensely heated; in typhoid pneumonia the several symptoms are those of typhus or blood-poisoning; in suppurative pneumonia they are those of pyæmia. The important bearing of this on treatment is obvious. He would further remark that other pulmonary diseases besides pneumonia, especially affecting the great pulmonary plexus of vessels, also manifested their effects on the blood of the whole body. Thus in general emphysema of the lungs, which wastes and reduces many of the pulmonary vessels, the system becomes anæmic and cachectic; and in extensive pulmonary tuberculosis the degenerative or scrofulous tendency rapidly pervades the body. So far, then, as Dr. Waters referred the primary seat of pneumonia to the pulmonic capillaries, he (Dr. Williams) agreed with him. But when he went on to exclude the extreme bronchial and other tissues from a share in the lesion, and to deny the very existence of any intervesicular or filamentous tissue, he (Dr. Williams) would wait for a further confirmation before he could accept his view. He had himself ascribed the peculiar rusty, viscid expectoration of pneumonia to an extension of the inflammation to the mucous membrane of the minutest bronchi, and had attributed the fine crepitant rhonchus to the forcible passage of air through this viscid mucus into the cells; and he still doubted that a better explanation could be given. There was something quite characteristic in this sign, consisting of a series of fine, sharp crepitations accompanying inspiration, which seem to be close under the ear, and limited to the spot of vesicular tissue which is their seat; and not, as in the case of bronchial rhonchi, heard in adjoining parts. Its ephemeral duration, too, was significant of the tendency of the inflammation to go on to more complete obstruction and consolidation, which superseded the crepitation by other signs. No doubt, if Dr. Waters's observations were exact, the pathology of pneumonia would be much simplified; but he (Dr. Williams) doubted whether they were compatible with the occurrence of certain varieties of pneumonia which had been described by himself and others, and which seemed to point out a variation in the extent of the inflammation, involving other tissues beyond the mere pulmonary plexus. Neither could he (Dr. Williams) agree with Dr. Waters in the importance which he attached, or the explanation which he gave, to the partial loud respiratory sound which sometimes precedes the crepitant rhonchus. In many cases it is never heard, for the breath sound is weaker than usual before the crepitus begins. In other cases, an irregular, exaggerated sound is sometimes heard; but it appeared to him to be a supplementary movement in the parts around the spreading obstruction, rather than to be due to dryness of the vesicles, as supposed by Dr. Waters. And here he (Dr. Williams) would take occasion to remark, that it is a mistake to suppose that inflammation causes dryness at any stage in serous membranes, or in parenchymata. In mucous membranes there certainly is dryness at any stage, from the interstitial congestion and effusion interfering with the natural mucous secretion; but in serous membranes it was otherwise—increased exudation attends every stage of inflammation. Some authors had erroneously ascribed the friction sound of pleurisy and pericarditis to dryness of the membrane; but he (Dr. Williams) had ascertained by experiments on animals that the friction sound is always due to a disposition of coagulable lymph, sometimes extremely thin; and this, by its adhesiveness, is the cause of the rubbing sound between the serous surfaces Neither is there any reason for assuming the existence of dryness, in the early stage of inflammation, of the pul-

monary vesicles, which are as simple as serous membranes. In conclusion, Dr. Williams thought they were indebted to Dr. Waters for his researches; but he did not consider them conclusive on this subject, interesting alike to pathology and diagnosis.—*Med. Times and Gaz.*, Dec. 23, 1865.

—

12. *Certain Forms of Hæmoptysis, unassociated with Pulmonary Tuberculosis.*—Dr. Richard Payne Cotton draws attention (*Lancet*, Dec. 2, 1866) to what he believes to be a not unfrequent, though little recognized form of non-tubercular hæmoptysis, met with chiefly in the female sex, but sometimes among males, generally in the early period of life. He relates three cases illustrative of this, one of which is the following:—

"A young lady, aged 18, recently arrived from a residence in one of the West India Islands, was supposed to be phthisical. I was requested to see her, and report upon the nature of her disease, about which several very conflicting opinions had already been given. She was anæmic, nervous, and out of health; had a dry cough, but had not become thinner; her catamenia were regular, but scanty; her appetite was capricious; and she had had frequent hæmoptysis, which, there was every reason to believe, did not proceed from either the mouth or fauces. The blood, upon examination, was found to be thin and watery, of a dark colour, free from coagulum, unassociated with either bronchial or salivary secretion, and in general appearance much resembling a mixture of *red-currant jelly and water*. I was informed that this was its general character. Sometimes it had been considerable—as much as half a pint in twenty-four hours; at others, it would not exceed a teaspoonful or two during the same period; sometimes it would be scarcely enough to tinge a pocket-handkerchief, and often it would disappear for days together. This state of things had existed for nearly two years, causing great anxiety to the patient and her friends, from a belief that it was indicative of pulmonary disease. Careful examination of the chest, however, failed to elicit any evidence that such was the case. Rest, change of air, and the tincture of sesquichloride of iron, entirely restored this patient to health. It is now more than three years since I was consulted, and I heard a short time back that the young lady was in perfect health."

"Other cases of this form of hæmoptysis," he states, "have fallen under my observation; but I shall not specially refer to them in consequence of not knowing their sequel. At least twelve or thirteen have happened in my own wards at the Hospital for Consumption. Two only of these were males; the rest were females, generally of delicate and nervous appearance, and under the age of thirty. Several had very suspicious symptoms of phthisis; but the physical signs failed to exhibit any evidence of pulmonary tuberculosis, and most of them improved in health under appropriate treatment. In every case the expectoration was of the same general character; sometimes it was mixed more or less with bronchial mucus, slightly tinged perhaps with blood, and sometimes with salivary secretion; but more frequently it was simply watery blood, resembling, as I have described, a mixture of red-currant jelly with water."

The following are Dr. C.'s conclusions, drawn from his observations of such cases:—

"1st. There is a form of true hæmoptysis in which the expectoration is of a dark colour, and of a more or less watery consistence, bearing a close resemblance to a mixture of red-currant jelly and water.

"2d. That such hæmoptysis is of non-tubercular origin, and may proceed from any part of the gastro-pulmonary mucous membrane.

"3d. That it is attributable to a morbid and fluid condition of the blood, allied, at least in appearance, to that which is met with in purpura and scurvy."

—

13. *Snow's Theory of the Causes of Cholera Explained and Illustrated.*—The following able exposition of Dr. Snow's theory of the propagation of cholera, given in the *Med. Times and Gaz.*, Oct. 1865, by Dr. B. W. Richardson, will be read with interest.

"The first element of the theory is to the effect that cholera, pathologically, is a disease exclusively of the alimentary canal; that the great primary change from healthy to diseased action is at first locally confined to the alimentary tract;

that on this there is rapid exudation of fluid matter from all parts of the body; and that the collapse, cramps, coldness, and other external symptoms of the malady are but results of the abstraction of water from the tissues.

"The second element in the theory is that the primary change in the alimentary canal is always induced by the introduction into the canal of a specific poison.

"The third element is that the poison itself is exclusively contained in the intestinal excreta of the infected person—that is to say, either in the vomit or in the matters passed by the bowels. There is nothing exhaled from the lungs, nothing from the skin of the cholera patient, that produces the disorder. It is all a question of the increase of poison in the alimentary canal, and ejection of poison from the canal.

"The fourth element in the theory is, that the poison is not a gas, is not a vapour, but a substance capable only of existence either in the fluid or the dried form of matter; *ergo*, it can only be wafted a little way by the air, and when it is in the dried state it can only be carried long distances by being attached to articles of clothing, or by being disseminated through the agency of water.

"These are the essentials of Snow's theory. They have been misunderstood because they have not been separated from certain broad and practical conclusions with which he carefully connected them, and which have been much misrepresented.

"The leading misrepresentation of the Snow theory is that he, Snow, connected the spread of cholera purely with the supply of impure water; and we constantly hear the theory spoken of as though the author of it, having no grounds to go upon, had a bare crotchet that because people drank bad water they took cholera. This is an utterly false view of the case. Snow only looked upon water as the great means by which the cholera poison was distributed. He said, and he proved, that if choleraic excreta be supplied to a community by and through the water which that community drinks, such process will prove the most determinate means of introducing cholera into the community, and that by such process great and sudden outbreaks of cholera will be secured. Acting on this thought, he actually advanced directly to the cause of the cholera during the terrible Broad-street epidemic in London, and, removing the handle of the pump by which choleraic poison was being dispensed to many hundreds of the population, he stopped the plague as if by magic. But while he held to this view of water as a means of propagating the poison, he enforced the opinion that there were other modes of transit. He puts these modes into four groups. First, he held that the moist cholera excreta on the clothes and bedding of infected persons might be carried mechanically by the *vapour* of water, and might enter the nostrils and mouth in that form, and so be swallowed with the buccal secretion. It was in this way, he believed, that laundresses engaged in washing the clothes of infected persons were so readily attacked. Secondly, he maintained that the poison might dry on infected clothing, and that from such clothing, on its being unfolded or moved, the solid organic matter might escape in small substance, might be wafted a few feet in the air, and might, in fact, be absorbed through the mouth by any one exposed to it. Thirdly, in respect of nurses, persons who lay out the dead, and others in attendance, he urged that these might actually carry the poison on their hands, and infect themselves by taking their food while their skin was not properly clean. In mines and other dark places where many persons congregate, this, he thought, was a very common means of communication. Lastly, he concluded that the very utensils—such as basins and cups used by the sick—might convey the choleraic matter, or even the cloths on which such utensils, imperfectly washed, have been dried.

"Thus there was not a process by which the matter of cholera could be conveyed, omitted by Snow in his thesis; and we venture to state that if all his precautions were carried out, cholera would soon be an extinct disease.

"Another cause of misapprehension of Snow's theory deserves notice and explanation. It was unfortunate that the author of the theory died while yet the question to which we have next to refer was under consideration. The question was, whether there exists a specific cholera cell capable of reproduction,

and from the first of which all other cells proceed; or whether there can be such a thing as a spontaneous generation of choleraic poison. It must be admitted that Snow, who was a staunch opponent of the doctrine of spontaneous generation, held by the cell theory, and was at first content to deal with the difficulties it suggested by comparing the origin of cholera poison with the origin of organic forms. Thus when he was once asked at the Medical Society of London where the first cholera cell came from, he answered by begging the questioner to tell him where the first tiger or the first upas tree came from; adding, 'I have no power to answer questions on the subject of ultimate facts.' Later, however, in his life he was beginning to reconsider the question of the origin of the poisons both of cholera and of typhoid fever; and had he lived, we doubt not that, guided by his clear and vast intellect, and his unbiassed nature, he would have modified his views in accordance with the natural truths that might have been presented to him.

"Is there any reason why at this stage of our knowledge we should ourselves modify that part of the Snow theory which treats of cholera poison as a reproductive cell capable of development only by reproduction? We think there is, and we believe that, in fact, such modification widens and strengthens the basis of the theory. The position seems to be this, that all the points Snow originally taught—in reference to the alimentary canal being the seat of the disease, and the alimentary excreta the poison of the disease, as well as in reference to modes of transmission of the poison—are confirmed; but that, in addition, such poison may, under peculiar conditions, be produced without the intervention of a first case. It is not, however, probable, nor, as far as we can see, possible, for such generation of poison to commence in the living body itself. The evidence seems to point to changes occurring in excreta that have been passed from the body. These excreta, during a process of special decomposition, become transformed into poisonous matter, which by its presence tends to excite the same change, in continuation in similar matter, and which, introduced, by accident, into the alimentary system of the living body, excites a new organic secretion and reproduction of poison.

"That there are periods when organic matters in a state of decomposition undergo peculiar transformations, or, in other words, that the process of decomposition is not a uniform process, always accompanied by the same products, is now generally accepted by the physiological world as a truth the importance of which cannot be over-estimated. We shall hope, indeed, one day to show, on experimental demonstration, not only that organic matters yield particular products under particular conditions, but that those products are also particular causes of disease; and we believe that so far, and in accordance with this demonstration, the theory of Snow will have to be modified. We shall then, while retaining the essentials of his theory, accept them *minus* the dogma that there must be, it matters not how remotely, some connection between one case and another case. We shall say that a case being in a community will communicate the disease if it be permitted so to communicate, and that, too, whether the case be an importation or a development; but we shall not say that necessarily the first case was an importation.

"In so far as practice is concerned, the whole experience of the present epidemic has been to show that choleraic poison, once developed, travels only in the manner suggested by Snow, and that all rational measures for suppression of cholera rest on a correct appreciation of his theory. Thus, at Constantinople, infected articles of clothing were washed in water which afterwards escaped to a drinking fountain; thus, in Paris, the disease is spreading by the aggregation of diseased with healthy persons; thus now, as in all former epidemics, it runs that those who attend most closely to the sick and wash the infected clothing die most speedily; thus it is that when the poison is introduced into or developed in towns where it cannot contaminate great supplies of water, the disease is localized and limited.

"The most striking illustration of the truth of Snow's theory has been given us at Epping in the outbreak which we described last week. There eleven persons were attacked and eight died. There the centre of the disease was on elevated ground; so that a low position had nothing to do with it. There the

disease occurred with a falling in the mean temperature, so that heat had nothing to do with it. There the disease struck and destroyed before the sufferers had time to feel dread; so that fear was not the cause. There eleven people were attacked, while hundreds in the district and some in the house escaped; so that no pervading atmospheric influence especially affecting *individuals* had anything to do with the disease. There there was plenty to eat and plenty to drink; so that poverty had nothing to do with the matter. There there were persons young and old, and of different occupations and sexes; so that age, sex, and habit had nothing to do with the event. And yet eleven persons were attacked. To what central and single source can we look for causation? It is before us. The sufferers drank from an infected well, or they came in contact with excreted matter from infected persons. It matters little whether Mr. or Mrs. Groombridge in their travels did or did not accidentally come in contact with excreted cholera poison, and did or did not communicate to the drinking-water of their house such poison: or whether that water, impregnated with organic matter derived from the closet of the house, became poisonous, under a special form of organic decomposition: the results are the same, and while we deplore the catastrophe at Epping, we cannot but express satisfaction that the outbreak occurred in a place from whence the choleraic virus could only be distributed amongst a limited number of the unfortunate."

14. *Efficacy of Lemon-Juice in Diphtheria.*—Lemon-juice has for some time been recommended in the treatment of diphtheria. M. GUERSANT was in the habit of prescribing to his patients slices of lemon to be kept in the mouth and frequently renewed; but this was only an auxiliary measure, being used together with cauterizations and astringent injections. But in a paper presented to the Academy of Medicine last June, Dr. RÉVILLOUT contends that lemon-juice is one of the most efficacious medicines which can be applied to diphtheria, and he relates that when he was a dresser, his own life was saved by its timely application. He employed three dozen lemons and gargled his throat with the juice, swallowing a little at the same time, in order to act on the more deep-seated parts. The results were that the false membranes were detached, the glandular enlargement decreased, and recovery soon followed. M. Révillout has noted eleven cases of entire success attained by this method of treatment. In one of his cases, which may probably be regarded as a type of the others, he prescribed as a gargle the juice of four lemons every hour, and the patient was directed to swallow a portion so as to modify the condition of the pharynx and œsophagus. The effects were to detach the diphtheritic exudations and to reduce the glandular enlargements, and the swelling of the face; and in twenty-four hours after the commencement of the treatment all appearance of diphtheria was removed.—*B. and F. Med.-Chir. Rev.*, Jan. 1866, from *Journal de Médecine et de Chirurgie Pratiques*, June, 1865.

15. *Hyposulphite of Soda in Diphtheria.*—Mr. J. C. MAYNARD extols (*Med. Times and Gaz.*, Dec. 30, 1865) the curative powers of the hyposulphite of soda in diphtheria. He ascribes the credit of this discovery to Dr. TUBBS, of Upwell.

The plan of treatment he describes as follows: "On first visiting a case, if not very far advanced, and in which only a few spots are visible, the throat is dressed twice a day with a strong solution of the hyposulphite of soda—viz., ʒiij of the hyposulphite; glycerine ʒij, with ʒvj of water. This generally removes the incipient exudation in forty-eight hours, sometimes in less. But if the case is an advanced one and the parasitic plant is making rapid strides, we wash the throat well out with warm water by means of one of Maw's flexible syringes. This is alike agreeable and most beneficial to the patient. The affected parts are then dressed with the strong solution, and a gargle of ʒss of the hyposulphite to half a pint of water, with ℥ss of glycerine, is given to be used every hour.

"The effect of the solution upon the exudation is most marked. It appears to solidify and dry up the false membrane, and when the syringe is again used, which is to be frequently done, the force of water will, if not completely, nearly entirely wash it away. The exudation in this way seldom or ever re-forms, and

the patient makes comparatively a rapid recovery. In cases of a graver character, and where there is a larger collection than usual of inspissated mucus, we clear out the posterior nares by means of a powerful curved leaden syringe which is introduced into the nostril. In the putrid stage, and when the unpleasant odour from the throat is very offensive, a small quantity of Condy's disinfecting fluid added to the water with which we syringe the parts has proved of great advantage. I may add that from half a gallon to a gallon of warm water ought, certainly in bad cases, to be thrown into the throat three or four times a day. The ext. belladonnæ applied externally has proved very useful where there has been much swelling.

"In cases of very young children where it is difficult to dress and get at the throat, we give the hyposulphite internally, from gr. j to gr. iij, every four hours, and allow them to swallow the gargle, which, by the way, they very frequently do without permission. Dr. Tubbs informs me he is now giving to adults gr. viij, every four hours. Port wine, beef-tea, brandy, and bark are, of course, given in suitable quantities, and in cases where there was much prostration we have occasionally thrown up, with very satisfactory results, an enema of port wine, beef-tea, and isinglass."

—

16. *Treatment of Articular Rheumatism and other Affections by the Subcutaneous Injection of Sulphate of Quinia.*—M. Dodenil has instituted some researches on this subject, and draws from them the following conclusions: 1. In articular rheumatism, as well as in other diseases in which its efficacy is established, the sulphate of quinia may be administered by the hypodermic method without serious inconvenience, and with some advantages that may be readily appreciated. 2. Those who have hitherto employed this drug in subcutaneous injection appear to M. Dodenil to have employed insufficient doses, which circumstance explains the absence of physiological phenomena in some of the published details. 3. It is necessary to introduce beneath the skin a dose above the half, and nearly equal to two-thirds of that which is given by the mouth, in order to obtain almost identical effects. 4. Absorption is more rapid, and elimination is more prolonged where a large dose is employed; and 5. The greatest advantages of the hypodermic method so applied are the rapidity and certainty of its action, and the immunity secured for the digestive canal. This last result is important, for the healthy condition of the stomach allows the patients to take food early, and shortens the period of convalescence.—*British and For. Med.-Chir. Rev.*, Jan. 1866, from *Bull. Gén. de Thérap.*, Aug. 15, 1865

—

17. *The Hot Mustard Hip-bath in Diarrhœa and Choleraic Diarrhœa.*—Dr. Joseph Bullar extols (*Brit. Med. Journ.*, Nov. 18, 1865) the efficacy of the hot mustard hip-bath in diarrhœa and choleraic diarrhœa, and relates three cases illustrative of its curative effects.

"In these cases," he states, "no medicines were given. They are fair, simple experiments, in which there can be no possible doubt that the hot water mustard hip-bath relieved simple diarrhœa in a strong vigorous man and in a puny infant, and choleraic diarrhœa in a weak strumous child. I bring them forward as simple experiments worthy of attention; not as proofs that this should be the universal treatment of diarrhœa, but that it is one promising mode of treatment, simple, efficacious, rational, and now especially valuable as strengthening the more important point, that there is a stage in Asiatic cholera—that stage in which the great gush of watery fluid from the gastro-intestinal surface has taken place, followed by the cold skin, the shrunken hands, the want of secretion of urine, the commencing decarbonization of the blood—in which this powerful remedy may, by producing reaction, bring back the circulation to the surface, and stop the progress of the disease.

"That it is a most powerful remedy, these cases of diarrhœa prove; and the reasons seem to me to be these. In the first place, it produces a revulsion of blood to the surface, and thus changes that tide which has set in towards the organs of the abdomen.

"The visible effect of hot water at 110° with mustard is to redden the skin more, and with greater rapidity and permanence, than water alone.

"This red colour arises from the coloured blood-corpuscles becoming redder, more oxygenized, and therefore of higher vitality, than they do in passing through the lungs.

"Here, in the skin, the blood-corpuscles are passing from the smallest arteries to the radicles of the veins through the intervening capillaries, and would normally have become more purple instead of scarlet, having expended part of their oxygen. In cholera they have become at this point much more venous, giving the characteristic blue, or rather leaden aspect. The corpuscles are highly carbonized instead of oxygenized, and the patient dies of carbonized blood.

"In the last stage of life, his whole surface is leaden or blue and cold, and he lies pulseless often for hours; and, though so icy cold to the touch, throws off his bed-clothes, instinctively seeking through the skin more oxygen for the carbonized blood stagnating in his capillaries.

"Some years ago, a pastrycook here went into his ice-well, and was asphyxiated by carbonic acid gas there. Shortly afterwards, when his dead body was brought up, it was as blue and leaden and livid as a cholera corpse. He died of carbonized blood.

"It is true that respiration goes on to the last in cholera; but pathological anatomy shows that the mass of blood in the body is venous. The pouring out of the watery parts of the blood and its salts leaves the corpuscles without life, and in a short time incapable of being re-vitalized. The object and hope is, to stop this white hemorrhage before the red corpuscles are incapable of re-oxygenation.

"Now, if we consider the large surface of the skin which is reddened by oath mustard bath and the rapidity of the circulation, the bath itself must, by this reddening process, be a powerful agent towards arterializing the whole mass of blood, and thus in giving more life. A blood-corpuscle does not take a minute to complete the whole circuit of the body. Each corpuscle thus reddened, and therefore more highly vitalized, passes on to the heart, and its place is instantly taken by another, subjected to the same process, and so on in every capillary vessel subjected to the heat and stimulus in an ever-flowing stream, and so rapidly that each makes the whole circuit (though it does not return to the same spot) in less than a minute of time. The amount of corpuscles so reddened in half an hour must be very considerable. I can only explain in this manner the rapid restoration to good health and strength in the cases related; and, if so, the hope that this treatment early employed may diminish the pernicious after-effects of the devitalized corpuscles in the vessels, only to be got rid of, if at all, by the after-fever.

"From this reasoning, it follows that the reddening stimulus to the skin must be over a large surface, and continued for a considerable length of time, and tried early, before the blood-corpuscles have altogether lost the power of becoming oxygenated. And the test that the remedy has been applied in time would be in its reddening effects on the surface. If no reddening were produced, the hot mustard-bath would have been applied too late."

---

18. *Atropia in the Treatment of Constipation.*—Dr. ALEXANDER FLEMING, in a paper read before the British Medical Association at its last meeting, extols the powers of atropia in the cure of constipation. He states that in the course of his practice, having had occasion to prescribe atropia, he noticed frequently that in a few days a slight relaxation of the bowels took place, and if constipation existed it was removed. Occasionally purging was produced. He thinks this effect is brought about by *increased* peristaltic action. The following is Dr. Fleming's explanation of the *modus operandi* of this article. The cause of this increased peristaltic action, he says, "may be direct stimulation of the muscular coats by the atropia carried to it with the blood; but other causes have been suggested to my mind from close observation of the effects of atropia on other parts of the body, more especially on the throat, stomach, and bladder. When this drug is exhibited in small and medicinal doses, it causes remarkable dryness of the throat and tongue, difficulty in, yet constant efforts at, swallowing. The changes in the act of micturition are

remarkable and noteworthy. This is often hurried and frequent, sometimes interrupted, and occasionally there is slight strangury. I have seen a patient compelled to make water every five minutes. In the throat, the mucous secretion is obviously checked, the membrane is seen to be dry, and the surface is thus rendered more susceptible of irritation; hence the constant efforts at deglutition. I believe the effect of the drug on other mucous membranes to be of the same nature; and, in the bladder, this arrest of the mucous secretion results in irregular and frequent micturition." According to this view, its action on the bowels is easily explained. The mucous secretion being checked, the irritation caused by the contents of the intestinal canal, when its surface is thus unprotected, provokes more prompt and vigorous contractile action.

Secondly, atropia constricts the smaller arteries; and we can understand that a gut, dormant and paralyzed by distension, is the subject of passive congestion, the continuance of which will contribute to maintain its state of inertia. Atropia, acting on the arteries, checks the supply of blood to the bowel, relieves the congested muscle, and thus facilitates its return to healthy action. This *modus operandi* is analogous to the well known effect of blood-letting or leeches, in relieving the congestion of, and unloading an inflamed intestine.

Accepting these views of the *mode of action* of atropia on the bowels, we at once perceive its advantage over the ordinary irritant purges in the treatment, not only of simple constipation, but especially of the more serious and alarming cases of intestinal obstruction from impacted feces. The ordinary irritant purges provoke increased secretion and peristaltic action of the gut *above* the obstruction; this may succeed in propelling the accumulation forward, but should it fail in doing so, we have inverted action and vomiting, with the further risks of enteritis and general, and it may be fatal, exhaustion of the patient. Atropia, on the contrary, operates through the blood on the entire canal; acts directly on that part of the gut which is distended by the accumulation, and so paralyzed. Deprived, by the drying qualities of the drug, of its natural coating of mucus, the mass more readily provokes irritation; the natural contractile action is re-established; and the bowel is more or less quickly relieved of its contents.

There is another circumstance connected with atropia, which distinguishes its operation from that of common purgatives; its action is not followed by reaction; its relaxing power is not succeeded by a dispcsition to constipation. On the contrary, the improved action of the bowels is, comparatively speaking, sustained.

The powder and extract of the crude drug belladonna have been employed successfully in constipation by Bretonneau, Trousseau, Fleury, Drs. Brinton, Routh, Fuller, Leared, and others; and a most interesting paper on the Use of Belladonna in Intestinal Obstruction was read at the Bristol meeting of our Association in 1863.

Dr. F. does not undervalue the importance of diet and regimen in constipation, but assigns to them the first place in the cure, and he regards medicines only as auxiliaries.

In cases of *simple* constipation, Dr. F., has exhibited "atropia in various forms, both in pill and in solution; but my later experience has led me to the adoption of a plan of treatment, of which the following is an outline.

The subjoined draught is given the first thing in the morning and the last thing at night on an empty stomach. ℞.—Magnesiæ sulphatis ℥j; acidi sulphurici aromat. ♏x; tinct. aurantii ℥j; aquæ ad ℥j. M. Ten minims (containing one-sixtieth of a grain) of a solution[1] of atropia are added to the draught

[1] The solution of atropia which I use is made thus: Atropia, 1 grain; distilled water, 5 drachms. Dissolve *thoroughly* with the aid of a few drops of diluted muriatic acid, and add of rectified spirit sufficient to make ten drachms. This solution keeps well, and is of uniform strength. The tincture and extract of belladonna, however carefully prepared, vary much in power. I have found the tincture of one chemist seven times the strength of the same preparation from another and equally respectable chemist; and the extract is even more uncertain. The internal, and at the same time efficient, use of these preparations is for this reason

at bedtime; and the dose is increased nightly by two minims, until a very slight degree of the earlier physiological effects of the drug—dry throat, wide pupil, and dim sight—is produced. This is attained with much precision and safety; but it may be necessary to give thirty, forty, or even fifty minims, according to the strength of the patient, before this result is attained. The dose should then be somewhat diminished, and continued at the reduced quantity for two or three weeks, as circumstances may indicate. I then discontinue the drug gradually; and finally replace it with strychnia, giving five minims of a solution[1] in both morning and evening draughts for a week or two; or the strychnia may be given alone as soon as the saline draught can be dispensed with. This commonly suffices to restore the normal tone of the bowel, and completes the medicinal treatment.

When constipation is neglected, the feces accumulating gradually distend the bowel, and finally deprive the muscular coat of its irritability and contractility, and we have established one of the most frequent forms of *obstruction* of the bowels. (The observations in the present paper refer to this form only.)

If, after a moderate use of the ordinary purgatives by the mouth and in the form of enemata, the obstruction shows no disposition to yield, and the patient suffers from pain and distension of the belly, with (it may be) nausea and vomiting, I prohibit entirely the use of the more powerful cathartics, the exhibition of which increases the vomiting and irritation and may provoke inflammation. I desire the patient to be confined to liquid food; viz., milk and beef-tea alternately every four hours. If there be much vomiting, I direct the milk to be mixed with one-third of Carrara water, and the quantity of food at each meal to be very small, until the irritability of the stomach has subsided. The following draught is prescribed every four hours, one hour before each meal. ℞.—Magnesiæ sulphatis ʒj; solutionis atropiæ (author) ♏iv; acidi sulphurici diluti ♏x; aquæ, ad ʒj. M. Fiat haustus.

Should there be much spasmodic pain, I add half a drachm of chloric ether, prepared by distillation, to each dose. This draught is, for the most part, readily borne by the stomach; promotes gently the action of the bowels; and softens their contents. The atropia favours, in the manner already indicated, the contractile power of the gut. In using atropia in the manner specified, the patient *must* be seen twice daily; for, as a slight degree of the physiological action of the drug should be induced, the dose should be increased, diminished, or omitted, according to the effect observed. If pain and indications of approaching inflammation be present, warm fomentations to the belly are demanded; on the other hand, if these symptoms be absent, the general purpose of the medication is promoted by frictions two or three times a day with warm liniments; the rubbing to be so applied as to promote the normal course of the intestinal contents.

In a considerable proportion of cases, this treatment alone affords the desired relief; in other and more obstinate examples, we have to conjoin the use of aperient enemata. These should be used two or three times daily; and be introduced by means of the rectum-tube as high as possible into the bowel. When ordinary injections fail, ice-cold water sometimes succeeds; and it is well to bear this in mind.

Between the enemata, galvanism should be applied to the bowels. This agent should be conducted through the rectum, and passed, as nearly as may be possible, through the paralyzed gut; care being taken to employ it gently, but

---

very unsafe. The solution is so proportioned, that ten minims, containing one-sixtieth of a grain of atropia, is the commencing dose for the adult.

[1] The solution of strychnia which I use is made thus: Strychnia, 2 grains; distilled water, 5 drachms. Dissolve the strychnia *thoroughly* with help of a little diluted muriatic acid, and add of rectified spirit sufficient to make ten drachms. This solution has the same advantages over the powder, extract, and tincture of nux vomica, that the solution of atropia has over the tincture and extract of belladonna. It is uniform in strength, passes readily into the circulation, and the dose can be apportioned with accuracy. The ordinary commencing daily dose is ten minims, and contains one-thirtieth of a grain of strychnia.

repeatedly, our object being rather to restore the action of the bowel by small but successive doses of the stimulus, instead of attempting to dislodge the impacted contents by one powerful application of the galvanic current.

Employed in this manner, the galvanism is infinitely more efficient than when passed in the ordinary mode from the back to the belly. It gives rise, however, to acute suffering; and, unless it be used gently, as I have directed, tends to exhaust the patient."—*British Med. Journal*, December 23, 1866.

[In the employment of so potent a remedy as atropia, we should be remiss in our duty did we not enjoin on the practitioner extreme caution, and that it should only be used where the attendant can see the patient at short intervals and keep close watch on its effects.]

19. *Curability of Bright's Disease.*—The *Lancet* (Dec. 16, 1865) contains a highly interesting and practically valuable paper on this subject by Dr. Arthur Hill Hassall. He gives the details of five cases, a *résumé* of the results of the treatment of which, so far as the albumen contained in the urine is concerned, is as follows:—

Case 1.—Francis S——. In this case the mean amount of albumen excreted, after his admission into the hospital on the 20th of October, 1864, was 70 grs. per day, but when he left at the end of January, it was reduced to 4.86 grs.

Case 2.—Edward G.——. The mean quantity of albumen in the urine at the period of his admission on October 29th, 1864, was 310 grs. per day, which was reduced on quitting the hospital, in the early part of January, to an average of 195 grs.; but at the end of July a still smaller quantity was found—namely, 161.4 grs., showing a total diminution of 148.6 grs.

Case 3.—Joseph J.——. This patient, shortly after his admission on April 19th, 1865, was passing 357 grs. of albumen per day, and on leaving the hospital of his own accord the amount still remained high, being 362 grs., notwithstanding which his condition had greatly improved; but at the end of July the mean quantity was only 202.9 grs., being a reduction of 154.1 grs.

Case 4.—John C——. The average daily amount of albumen passed after admission on January 12th, 1865, was 184.05 grs.; this was considerably decreased by the end of March, when he was discharged from the hospital, 124.4 grs. being then excreted. This quantity, however, was still further reduced when the urine was next examined, on Aug. 5, 77 grs. being found, showing a diminution of 107 grs.

Case 5.—Martin H——. In this case the patient, at the period of his admission on February 15th, was excreting 245 grs. of albumen daily; but on July 9th, just before he was sent to the Convalescent Institution, only 6.16 grs. were found for the day, the patient being in fact almost completely cured.

Dr. H. confesses that the striking facts recorded by him has excited his surprise. "The impression," he remarks, "I had derived from books in reference to Bright's disease was that it was nearly always a fatal and incurable affection, whereas it is really much more amenable to treatment than could have been anticipated—so much so, indeed, as in my belief to fully justify the title I have given to this communication. The particulars recorded appear also to prove that the disease is not exclusively local and organic, but is to a great extent a blood disease."

The treatment adopted in all the above cases, although varying in details, was similar in its principles. The free action of the skin was maintained by the occasional use of the vapour bath. Congestion of the kidneys, when present, was relieved by means of dry cupping. Tonics and astringents were administered, consisting chiefly of the tincture of the sesquichloride of iron, sulphate of quinia, tannic and gallic acids, and when the effusion was very great, occasional doses of hydragogue cathartics and diuretics were given; but above and before all, great attention was paid to the diet. This was rendered highly nitrogenous; milk and eggs were freely given, and meat two and even three times a day; indeed it is to the diet prescribed, and the rest from toil and anxiety experienced by the patients while remaining in the hospital, that I chiefly attribute the successful results of the treatment. The absence of wasting, notwithstanding the enormous loss of albumen, is remarkable in most cases of Bright's disease, and

was especially noticed in the cases above recorded, the majority of the patients throughout their illness retaining a considerable degree of plumpness and flesh.

20. *Entozoa in the Muscles of Animals destroyed by Cattle Plague.*—Mr. LIONEL S. BEALE has been for some time engaged in researches upon certain, for the most part spindle-shaped bodies found in the tissues of animals which have died of the cattle plague, and he has published (*Med. Times and Gaz.*, Jan. 20, 1866) the results with figures of the supposed entozoa.

The facts concerning these entozoa he sums up as follows:—

"1. That in almost all, if not in all, animals dying of cattle plague, entozoa or entozoon-like bodies exist in considerable number in the voluntary muscles of the system and in the heart.

"2. These or closely allied species have been known for more than twenty years, but their nature has not yet been determined. They have been found in the ox, sheep, deer, pig, rat, mouse, and perhaps other animals.

"3. They are occasionally found, but in very small numbers, in animals apparently in perfect health when killed.

"4. In the muscles of a calf killed by cattle plague, under *six months* of age, these bodies were found in immense numbers.

"5. They vary in length from less than the $\frac{1}{300}$th of an inch to at least a quarter of an inch in length. They are, for the most part, imbedded in the contractile material of the elementary muscular fibre, but they are occasionally found free.

"6. They are for the most part spindle-shaped, and the external investment or envelope exhibits a very delicate and peculiar structure, being completely covered with delicate hair-like processes.

"7. The mass within appears granular to low powers, and exhibits a division into numerous segments, but it is found to consist entirely of minute bodies resembling one another, possessing very definite characters, less than the $\frac{1}{2000}$th of an inch in their longest diameter, and of peculiar form, being oval, flattened, the body slightly curved laterally, with one extremity blunt and the other almost pointed.

"8. The entire mass increases in size as these small bodies increase in number, probably by division and subdivision, within the cyst."

DR. COBBOLD calls in question the entozoal nature of these bodies, and expresses his belief that they are "sacs of psorospermiæ, and, therefore, also entophyta rather than entozoa," and that "their granular contents when highly magnified resemble the non-ciliated zoospores of certain confervoid algæ."

"The scientific question," remarks the editor of the *Med. Times and Gazette*, "as to their proper classification and nomenclature is of course very interesting, and a very desirable one to determine; but when this is done, the further question still remains for solution, what is their precise signification, and what is the meaning of their presence in the flesh of the diseased oxen? We know that they are living germs, that they pervade the muscular tissue of the diseased animals, and in our present ignorance, not only of their exact meaning, but also of whence they are derived, and of what are their effects upon the living solids and fluids, it appears to us that they are likely to be just as pernicious to life, and just as likely to be the disease itself, in the case of their being of a vegetable as of an animal nature. As far as we know at present, these bodies are present in every case of cattle plague, and are absent from the flesh of healthy oxen, or if present at all are in such sparse quantity that a long search has to be made to find one. This alone is a very strong fact, and when a similar connection was found between the presence and absence of trichinæ in human muscle and somewhat similar symptoms, no difficulty was found in at once arriving at the conclusion that the presence of the trichinæ and the morbid train of symptoms called trichinosis were really cause and effect.

"If these parasitic bodies should prove to be vegetable rather than animal germs, we think the fact should not be forgotten that our late long and dry summer and autumn were most prolific in all the lower forms of vegetable life, and that on the first outbreak of the cattle plague the question was seriously mooted whether it might not in some way be due to the *uredo rubigo*, or red

rust which infected some sorts of grass to a remarkable extent. In one of the earliest occurrences on a large scale in England of this pestilence, both amongst oxen and sheep, the grass upon which they had fed was observed to be most remarkably affected with this blight, and at that very time we directed our attention to the possibility of a connection between it and the disease, and particularly with reference to the inhalation of the spores into the lungs; but although these bodies could be readily enough traced in the mucus of the air-passages of the dead animals, nothing further confirmatory of such an idea could be elicited."

—

21. *Outbreak of Trichinosis at Hedersleben.*—A most formidable outbreak of trichinosis has lately occurred at Hedersleben, a village of 2000 inhabitants. Dr. KRATZ, in a preliminary report upon the outbreak, states that commencing at the end of October it still remained formidable at the time of his writing, December 10. It differed in several respects from other epidemics that have been recorded. Its most constant symptom at first has been the occurrence of vomiting and choleriform diarrhœa, accompanied by peculiar pains of the flexors of the extremities. Excessive sweating, sleeplessness, small and quick pulse, and great abdominal pain were other symptoms. The diarrhœa sometimes ceased spontaneously, and between the third and fifth week great oppression of respiration set in, marked by paroxysms of intense dyspnœa, occurring chiefly at night; and when autopsies have been made in these cases abundant migration of the trichinæ into the respiratory muscles, and especially the diaphragm, was discovered. Frequently in the course of the affection there was so considerable a subsidence of the symptoms that a very favourable prognosis seemed admissible; but in many of these cases a sudden aggravation of symptoms occurred, which soon led to a fatal termination. The period of the outbreak of the disease, after eating the infected flesh, was very varied, so that the period of incubation might be said to range from two days to four weeks; individual susceptibility seeming, however, to have little to do with this, the amount of the meat eaten chiefly determining the rapidity of the supervention of the symptoms. The favourable condition of childhood is remarkable, for of more than 100 children affected none have died. This may be due to the more active condition of the alimentary canal at that age; an observation corroborated by the unfavourable results which occurred in the early cases treated by opium. Of about 350 cases from 80 to 90 had died at the date of the report, about 200 of these persons having eaten the flesh completely raw.

Dr. Kratz gave benzine a very complete trial, but it is very doubtful whether it proved of any utility, for it seemed to exert no effect upon the migration of the trichinæ, while these animals could be kept alive in it for several hours. Continued in large doses for some days, Dr. Rupprecht believes that it may favour the occurrence of the muscular exhaustion which is to be dreaded in the disease.

Dr. Kratz, however, reserves his final decision as to its effects.—*Med. Times and Gaz.*, Jan. 20, 1866.

—

22. *Diagnosis by Means of the Ophthalmoscope.*—M. BOUCHUT, of the Children's Hospital, tells us that since 1862 he has paid great attention to the diagnosis, by means of the ophthalmoscope, of cerebral hemorrhage, softening of the brain, hydrocephalus, compression, and other diseases of the brain. His observations, now sixty in number, prove that all diseases which interfere with the cerebral circulation impede more or less the venous circulation of the eye, rendering the veins of the retina more distinct, dilated, and varicose; sometimes rupturing them, filling them with clots, and causing serous infiltration and hemorrhage in the retina, and consequent atrophy, etc.—all of which lesions are appreciable by the aid of the microscope.—*Brit. Med. Journal*, Dec. 23, 1865.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

23. *Use of Chloride of Zinc in Surgical Operations for Removal of Cancerous Tumours.*—C. DE MORGAN, Esq., Surgeon to the Middlesex Hospital, has published (*British and For. Med.-Chirurg. Rev.*, Jan. 1866) an extremely interesting paper on this subject. "The use of the chloride of zinc," he states, "was adopted in the first instance after removal of malignant tumours by the knife, for reasons which apply exclusively to operations on such growths. The results which were obtained led me to resort to its application in all wounds, whether made in operations or accidentally. Whether the special object for which it was at first used is attained even partially can only be proved by very long experience, but the general effects have been so immediately and uniformly beneficial in a large number of cases in which it has been applied, as to satisfy me that in the treatment of wounds the chloride of zinc is an agent of great value, well worthy of careful trial by surgeons."

Mr. De Morgan expresses his conviction "that in most cases of recurrence [of cancer], where the tumour has even been to all appearance entirely removed, the recurrence has been due to the presence of minute cancer elements which have escaped the knife, or, as is perhaps as frequently the case, to germs being set free by section of the tumour or of diseased tissue around it during the operation, and their implantation into the newly-cut structures. That this is the case is, I think, shown by the fact that where a voluminous breast with only a small tumour imbedded in it is removed, and the incision is consequently very long in proportion to the size of the tumour, the recurrence frequently takes place along the whole line of cicatrix, not especially in that part which corresponds to the site of the tumour. If, then, the view which has been so ably advocated by Mr. Moore be correct, that cancer is a local disease which becomes disseminated from the point of its first invasion, the practice of early extirpation cannot be too much insisted on. A tumour, as soon as it is recognized as cancerous, should be removed, if practicable, at once. A few days, even, may make a difference; not, perhaps, to any extent in the size of the tumour, but in the extension of its germs beyond its apparent limits. It would be better even to extirpate doubtful tumours, some of which might turn out on after examination not to be cancerous, than to leave them to develop themselves, and then to find, too late, perhaps, for help, the characters of malignancy becoming marked. These views, which had often been discussed amongst the members of the surgical staff at the Middlesex, encouraged Mr. Moore, in a severe case of breast cancer, to apply the solid chloride of zinc to a large portion of the surface of the wound made in its extirpation, as he had effectually done in a case of extensive epithelioma of the face, which he showed at one of the meetings of the British Medical Association in London. This was done in April, 1864."

It occurred to Mr. De Morgan that "one might obtain the benefits which were sought by using the caustic in a less active form, and that a strong lotion of the chloride of zinc applied freely over the whole exposed surface, after an operation for the removal of cancer, would penetrate to some little extent beyond the limits of the section, and would at least destroy any floating particles of the disease which might adhere to it without endangering the vitality of the whole thickness of the flap.

"The first case in which I tried this plan was that of a lady, forty-one years of age, who had a cancerous tumour in the right breast. She was well nourished and healthy, and had noticed the tumour about a twelvemonth. In the axilla was a gland slightly enlarged, but not hard, and in all respects the case was a favourable one for operation. The operation was performed in March, 1865. The strength of the solution employed was twenty grains of the chloride of zinc to the ounce of water; the whole surface of the wound was well sponged with it. The blood which still oozed was, as usual, rendered of a bright pink colour, and the contact of the solution at once caused a more free oozing from the

exposed surfaces; otherwise no effect was perceptible. The lotion was thoroughly pressed in with the sponge, and in a little time the surface became soft and creamy in feel, and this softness extended to a little depth—a line, perhaps. Here I stopped, not knowing how far I might venture without causing sloughing of the flaps of skin. My impression was that a superficial slough would form, and would be thrown off by degrees during the suppurating stage, which, I assumed, must of necessity ensue, and which, in fact, I rather desired. The edges of the wound were, nevertheless, put together with sutures, save at the outer part, which was left quite open, to allow of the free passage of the supposed inevitable pus. A compress was put over the wound to check the tendency to any further bleeding into the cavity. After recovering from the effects of the chloroform, she complained for two or three hours of smarting pain; not more, I think, than is usually felt, and from that time she was entirely free from any pain at all. I thought it probable that on removing the compress, about eighteen hours after, the parts would be found swollen and angry, although the pain had been so slight; but instead of that, the circumstance most noticeable was the absence of even the usual amount of fulness. It was evident that action, instead of being increased, had been diminished, one might almost say arrested, by the application. The skin, even up to the cut edge, looked and felt exactly like the skin of the other breast. Blood, in much about the same quantity as is usually found after such an operation, had oozed from the wound; but it was pink and creamy in character, and what was especially remarkable was the entire absence of the peculiar odour which is generally found in blood which has been pent up beneath a compress for some hours. There was, in fact, no animal smell at all. But what most struck me in the progress of the case was the absence of suppuration. The whole line of incision united in the course of forty-eight hours, except just at the outer angle, which discharged a *very* small quantity of the same pink, creamy-looking fluid for a day or two more, and then healed. The same absence of animal odour was noticed to the end. I certainly never saw a wound which did not heal absolutely by the first intention go through its process of cure so speedily or so quietly. The patient remains perfectly well to the present time.

"In cases of cancer on which I have subsequently operated I have used stronger lotions. In this first case the strength was 20 grains to the ounce. I next tried 30 grains, and then 40 to the ounce. With the stronger lotion a more rapid effect is produced, and the blood exudes more abundantly, but this is only for a few seconds, otherwise much the same course of events has been seen as in the first case during the early period. Some have healed in the same rapid manner, in some there has occurred an after suppuration, but in none have any bad effects been seen.

"What the effect of this treatment may be in limiting the tendency to return after extirpation of cancer, can only be determined by time and numbers. If the views of the diffusion and transplantation of cancer germs before expressed have any truth, it cannot but be beneficial; for to some extent it certainly must alter the character of the exuded matters and of the remaining tissues. My own impression is, that in cancer it would be well to go beyond the point hitherto reached, and that this may be safely done, for the effect of the chloride of zinc seems to be limited to the point with which it is brought into contact. It appears to produce very little irritation beyond that point, so that it may be worked into the inner surface of the flap till the tissue is softened to within a few lines of the surface without risk to the vitality of the remainder."

The favourable way in which the wound healed in the case just related satisfied Mr. De M. that the application might be employed in other than cancerous cases. "There was one point," he remarks, "which especially struck me, as giving it great value in hospital practice; the perfect purity of the discharges from the wound during the first few days after an operation. It is well known that the presence of decomposing animal matter tends to bring any dead animal matter with which it may be in contact into a rapid state of decomposition; and if this take place in a wound, it will certainly interfere for a time with the natural and healthy processes of cure, and may induce erysipelas or pyæmia.

"That this decomposition does usually occur is evinced by the peculiar sickly

animal smell which is perceived whenever a wound which has been covered for a few hours is opened. When, on the contrary, a wound has been fairly impregnated with the chloride lotion, there is invariably an absence of any animal smell whatever for two or three days; and, unless some diseased tissue remain in the wound, there may be none throughout the healing. Were this the only advantage, it would be a great one; I believe that in our hospital it has saved many a patient from erysipelas; certainly we have been for the last eight months very free from it after operations, while just before it was very prevalent. But this may be an accidental coincidence merely, and time and experience can alone determine how much is due to the treatment. It is not, however, the only advantage. One of the most striking consequences of the application is the quiescence of the wound. The action which one would imagine must of necessity follow the application of an escharotic so powerful as the chloride of zinc, is never to be seen. The parts, up to the very edges of the wound, retain their natural colour during the early periods after an operation. I can state this confidently after the use of the lotion in varieties of operations, the removal of tumours, amputations, even with extensive and thin flaps, as Syme's and Mackenzie's amputation, operations about the rectum, involving the mucous membrane, and in the perinæum, and in many others, as well as after accidental wounds. In many cases the wounds have healed in twenty-four hours, without the least fulness or swelling, and leaving a line of cicatrix which after a short time could hardly be seen or felt."

"That great pain sometimes attends the immediate application to a sensitive wound need not be mentioned. But this is not lasting. In most cases it subsides in from one to two hours; in some cases it does not occur at all. Where the application is made after an operation done under chloroform, the patient generally remains altogether free from pain. This is particularly the case when morphia has been subcutaneously injected, as Mr. Moore first suggested, immediately the operation is concluded, and before the effects of the chloroform have passed off. After this proceeding the patient often remains calmly asleep for some hours, and wakes entirely free from pain. There seems to be also less tendency to sickness. When, however, the immediate pain of the application has once subsided, the comfort which the patient enjoys is very striking. I have seen cases in which the patients could not tell from their sensations after a couple of hours that any operation had been done. One can explain, perhaps, from observing the action of the chloride, why action and consequent pain should be lessened or altogether prevented. It is quite clear that the chloride of zinc does not act as an irritant beyond the point of contact. If its use is carried so far as to produce an eschar, the eschar will act as an irritating body, and there will be inflammation and swelling around it; but if applied short of this, and it requires a continued application of the solid chloride to make an eschar in the natural structures, it produces a peculiar pulpy state of tissue, widely different no doubt from the natural tissue; but certainly not eschar, not a charred mass which *must* be removed by the ordinary process of separation below and around it. Were the surface of a large wound converted into an eschar, it could not heal in twenty-four hours. And yet the tissue appears disintegrated; it is rapidly discharged as a creamy exudation, leaving the parts below perfectly natural in appearance. This can easily be seen when the lotion is applied to an open wound. In this creamy surface must be involved all the sensitive and vasculo-motor nerves, and their function must be arrested. With many escharotics, as the actual cautery, the acids, &c., the irritating effect is propagated along the nerves beyond the point of contact. Although the nerves exposed on the surface may be destroyed, the effect is carried beyond this point, increased nerve action and inflammation is the result. It is not so with the chloride of zinc. From whatever cause it may be, the action terminates at the point of contact. The sensitive surface is destroyed, but no irritation is set up beyond the part directly acted upon. Hence there is no pain, no vascular action, no inflammation. Whether this is or is not the true explanation, the fact certainly is as I have stated it.

"Of course I do not mean to assert that all this immunity will be found in every case; but I can safely say that I have never seen it otherwise, and that, as a

rule, I have never seen the general run of cases go through so favourable a course as since I used this application.

"The mode of application has been described in connection with the first case in which I tried the solution. The first effect is always to stimulate the small vessels and cause a general oozing of blood from surfaces which had been previously dry. The blood becomes pink and creamy by contact with the chloride. On further application of the solution the whole surface is softened and assumes the same pink colour. The blood will continue to ooze out as long as the solution is applied, and for a short time after. Every part should be well saturated with the chloride—the edges of the skin, the adipose tissue, the spaces between the muscles, the medullary cavity, or cancellated structure of bone. At first I was afraid to touch bone with it, but I find now that no harm comes of doing so. The surgeon need not hesitate to apply it even to thin and delicate structures. Those cases have done best in which it has been most thoroughly used. For wounded surfaces I generally use a solution of from thirty to forty grains to the ounce of water."

—

24. *Subcutaneous Ulceration.*—By Jas. Paget (extracted from a clinical lecture). Among the frequent effects of inflammation are, the separations of adjacent layers of different tissues. Some of these deserve special notice for their practical importance. The simplest examples of this dissevering process are those in which one finds the capsule of the kidney more than usually separable, or the periosteum too easily stripping from the bone. In these cases there may be no more morbid change than that of softening of the walls of vessels, and the small quantity of connective tissue, which naturally hold together the two parts. A greater change is effected when articular cartilage can be stripped from bone; for here the separation is not possible till after the ulceration or extreme softening of one or both of the adjacent layers. In some of these cases it is observable that the disseverance of the bone and cartilage is without apparent formation of pus, or other morbid fluid. The cartilage, usually ulcerated on its under surface, can be raised from contact with the ulcerated bone, or the thin layer of granulations covering the bone, and no pus visible to the naked eye lies between them. This manner of disseverance by ulceration of bone and cartilage is generally known; it is a common result of acute inflammation of the joints. A similar process sometimes separates the subcutaneous fat from the subjacent fascia. It may fairly be called subcutaneous ulceration, to distinguish it from that with which it is mostly confounded—namely, the diffuse suppuration of the subcutaneous fat. There are truly several points of resemblance between the two processes, as there are between all instances of suppuration and ulceration; but a manifest difference is in this—that in the one the suppurative, in the other the ulcerative, process is greatly preponderant. In the diffuse suppuration, the pus forms an evident collection of fluid more or less widely separating the layers and upraising the skin; but in the ulceration, the separated layers remain in contact, or with only a little fluid between them. With these differences, others equally marked coincide in the general condition of the patients, and in the course and necessary treatment of the local disease. In the girl now under treatment, the disease appeared, when she was admitted into the hospital on August 15 of last year, as an ill-defined patch of mottled, dusky redness, larger than one's hand, across the front of the lower part of the thigh. This patch of diseased integument was scarcely raised above the surrounding level. To the touch, it felt firm and brawny, but unequally so in different parts. It was hot, but not very painful, and at only one or two points tender upon pressure. Higher up in the outer part of the thigh were two scars, said to have been formed after similar disease there. The patient's general condition was that of mere debility, and that not extreme. She had no fever, no hectic, no rigors, and, except after a slight attack of pneumonia, she scarcely lost weight or strength. A variety of different modes of treatment were all equally useless for the remedy of this state. Complete rest, blisters, ointment of iodide of mercury, and the internal use of iron, iodide of potassium, cod-liver oil, had no sensible effect. At length, one of the places at which tenderness had been long observed was found soft as if

with pus. This was opened, and in a few days later the opening was found to lead to a large space, in which the subcutaneous fat was completely separated from the fascia. The skin over this space was not upraised by any collection of fluid, and when the space was freely laid open by incision scarcely any pus flowed from it.

Within the last two years you have had opportunities of seeing three other cases of this kind under my care, and from them you may have been able to gather a general description of this disease. All the cases, you may have observed, have been in young persons of pallid complexion, with very feeble health; thin, and with very little muscular power. They might be called strumous, although they have not all the distinctive features of struma. In all of them the disease has been near the knee, where it is certainly most frequently seated, and in all the subcutaneous tissue, after feeling for a time firm and brawny, as if with inflammatory infiltration, has softened in one or more parts, and then has been widely undermined by slowly extending ulceration, with very little formation of pus. In the patient now in the hospital the skin is much more evidently and widely diseased than in the others; in them much of it, even when undermined, has appeared nearly healthy, neither elevated, nor tense, nor reddened; but some part of it, after slowly softening and then ulcerating, or being punctured, has let way into the ulcerated subcutaneous space. In all, this space at the first laying open has yielded very little pus; in none has any slough or tuberculous matter appeared; but all the surfaces after exposure have suppurated freely, though thinly, till near their healing. In no instance has the skin itself ulcerated widely, however far the subcutaneous ulceration might extend. In all alike the only effective treatment has been such a thorough laying open of the ulcerated spaces, and of all bays and channels leading from them, as has completely exposed their surfaces, and permitted them to be dressed by packing. By this alone has the ulceration been either stayed or healed. Till this has been done the ulceration has always gone on extending subcutaneously, and its exposed surfaces have shown no signs of healing. Drainage tubes, setons, injections, compressions, and many other means have alike failed. In all the cases the ulcerated surfaces thus exposed have healed slowly, forming large thin tender scars, easily breaking down or ulcerating; but finally all have recovered. Moreover, none of these patients has had any acute constitutional disturbance, and none of the medicines given them—tonics, iodides of potassium or iron, cod-liver oil, or others of the same classes—has appeared to have any really or directly remedial influence. To those who were before in poverty the hospital diet has seemed to do little good till the local disease has been brought towards recovery by the incisions; and after nearly complete healing the complete and firm scarring has been delayed till change of air has given renovated health.—*Med. Times and Gaz.*, Jan. 27, 1866.

---

25. *Cancer of the Testis in Children.*—This, according to M. GUERSANT, is not very rare. Many authors have described cases; and he has met with at least a dozen in very young children, even at birth or at the age of a year.

Pathological anatomy.—The tumour is, as in the adult, scirrhus, often encephaloid; colloid or fibro-plastic tumours are also sometimes met with. A testis removed by M. Guersant was found to be three times the normal size; it was smooth and soft, and presented to the eye the appearance of a firm white tissue, resistant at some points, having a lardaceous aspect. In other cases, there was a soft, rose-coloured, almost diffluent encephaloid substance, interspersed with small bloodvessels, and readily breaking down under the fingers. The tunica albuginea appeared healthy under the microscope. There were also fibro-plastic nuclei and cells of irregular form and granular aspect, lying here and there among the tissue. Some red points formed by extravasated blood were also seen; no seminiferous vessels could be found. M. Guersant has not seen ulceration of the scrotum in such cases; but examples have been recorded. Nor has he met with chimney-sweepers' cancer, which, he says, is more common in England than among the French. On *post-mortem* examination of children who have died from a recurrence of the disease, he has found cancer in the lymphatic glands; sometimes also in the mesenteric glands, liver, etc.

Causes.—The causes of cancer in children are perhaps still more obscure than in adults. Cancer of the testis has been seen in children whose parents have not had cancer; hence the disease cannot be said to be hereditary in all cases. The violent bruising of an organ may sometimes cause its degeneration; and thus, if a child's testes became cancerous after a contusion, it might be admitted that this circumstance acted as a determining cause on a predisposed organ.

Symptoms.—These cancers passed unperceived in their commencement. Children are often brought to the surgeon as soon as an enlargement of the scrotum is detected, which has already lasted some time; it may therefore be said that the disease at first appears in the form of a painless tumour either on the right side or on the left. When an examination is made, there is found a rather heavy elastic tumour having twice the ordinary size, or more, of the testis; there is generally no change of colour in the skin; the venous circulation is slightly modified; and, in most cases, the scrotum is not adherent to the tumour. The tumour is easily felt separate from the spermatic cord, on which it drags more or less; it is at a considerable distance from the inguinal ring, and generally has a round, sometimes knobby, shape. M. Guersant has in general not found the tumours to be uneven, but other surgeons have done so. When the disease is recent, the glands in the groin are not engorged, and the cord is healthy; there is in general no fluctuation unless hydrocele be present. When, however, there is encephaloid disease of the testis, there is a feeling of softness which may be confounded with fluctuation; but the tumour is not transparent.

The *diagnosis* is sometimes difficult. If an exploratory puncture be made, little or no fluid escapes, and the instrument cannot be moved about freely.

Cancer of the testis, which is generally not nodulated, as are tuberculous tumours, is diagnosed from tumours met with in children who present other signs of tuberculosis, by the circumstance that, in the latter, the integument is adherent to a point corresponding to the softened tubercle; and that a more or less considerable projection exists, in which the surgeon can recognize fluctuation arising from the presence of pus. Inflammatory engorgement of the testis has a rapid development and progress; while cancer is indolent for a longer or shorter time. The presence of cancer might be obscured by a hæmatocele, and only discovered on operating; when it would be for the surgeon to avoid interfering with the disease of the gland, and, if possible, to relieve the hæmatocele alone.

The *prognosis* is as unfavourable in children as in adults. Of six patients operated on by M. Guersant, one, a child 18 months old, died of convulsions three days after the operation; he lost sight of one; and in the four others the disease has returned, either in the inguinal or in the deeply seated abdominal glands.

Treatment.—At first, especially if the diagnosis be doubtful, the preparations of iodine may be tried internally and externally. If this treatment succeed, the disease has probably been of scrofulous or tuberculous nature. In cases of cancer, castration is always necessary. In performing castration in children, M. Guersant makes an incision at the back of the scrotum, and prolongs it to the bone, unless it be necessary to remove a portion of the scrotum on account of the ulceration and adhesion of the testis. In this case, an oval piece of integument must be removed. When the organ is laid bare, the cord is isolated and cut across, the artery being tied separately, or the whole cord together with a double silk thread drawn very tightly. If any arteries besides the principal one be wounded, they must be tied separately, and the ends of the ligatures must be brought to the lower part of the wound, whither they will serve to conduct the pus. Three or four points of suture must then be applied; the scrotum enveloped in a fenestrated piece of linen covered with cerate, over which is placed some lint; and the whole must be kept in place by a suspensory bandage. To prevent inflammation, the dressing may be moistened with cold water; care being taken not to abruptly leave off this application, lest reaction set in and erysipelas appear. M. Guersant renews the dressing daily for some days; leaving only the sutures, which are withdrawn as cicatrization advances. In those patients of M. Guersant who recovered, cicatrization was rapid; suppu-

ration was slight; and there were scarcely any constitutional symptoms. A return of the disease, however, occurred in every case of which he has been able to learn the subsequent history.—*Brit. Med. Journ.*, Dec. 16, 1865, from *Bull. Génér. de Thérap.*, 15 Novembre, 1865.

26. *Arterio-Venous Cyst in the Popliteal Nerve; Amputation; Recovery.*—Mr. C. H. MOORE communicated to the Royal Med. and Chirurg. Soc. (Jan. 23) the following case:—

A woman, aged 31, received a blow with an iron pump-handle in the middle of the ham. In a fortnight a painless, movable swelling, of the size of a hazel-nut, was found in the situation of the injury, and but for its distance from either hamstring, would have been pronounced to be an enlarged bursa. In sixteen months' time the tumour had increased, and seemed partly solid, and she first felt pain, which was referred to the foot. Three months afterwards, and twice subsequently in the following three months, the swelling was punctured, and on each occasion a yellow fluid, tinged red, first escaped, and as it flowed gradually deepened in colour, and continued to issue freely as blood from an open vein. The tension of the swelling was but temporarily reduced by these operations, and it increased in size so as completely to fill the ham, and protrude backwards in two prominent lesser swellings. The pain in them and along the leg and foot, the exquisite tenderness of the tumour, and a peculiar sudden pang shooting to the foot, while the canula was held motionless in the tumour, showed the nerve to be in some way mixed up with the swelling. After putting on a tourniquet, Mr. Moore made an incision into the tumour. Serum, black clot, loose fibrin, and some small clusters of white corpuscles were dislodged, partly with the finger and partly with a copious rush of blood from a vein at some deep part of the large cavity which had been opened. This proved to be a thin cyst, with a shining interior membrane, expanded into alternate ridges and sacculi, and traversed like an auricle, or right ventricle, by many firm cords. It being impossible to dissect it out, and improper on account of the state of the woman's health to leave the sac to suppurate, Mr. Moore at once amputated the limb. The patient recovered. Upon examining the limb the disease was found to be a vast cyst within the popliteal nerve, shaped like a double cone, one continuous with the higher, and the other with the lower end of the nerve. The expanded and hypertrophied textures of the nerve constituted the cyst, and the cords passing through it and along its walls were disparted nerve-bundles. A large vein, having no valves between it and the popliteal vein, opened obliquely like the ureter, on the front of the cyst; and in the upper cone, where alone firm lymph was collected, an artery equal in size to the superficialis volæ opened into the cyst. The disease thus proved to be an arterio-venous aneurism, but unlike those which are more commonly observed in the small size of its artery, in the possible fact of venous blood having sometimes regurgitated into it, and in the unruffled quiescence of its contents, which had even separated into their natural constituents, almost as when blood coagulates after its withdrawal from the living body.—*Med. Times and Gaz.*, Feb. 10, 1866.

27. *Removal of the Entire Tongue for Epithelial Disease, by Means of the Ecraseur.*—Two cases of epithelial disease of the tongue, in which the whole organ was removed by Mr. PAGET, are recorded in the *Med. Times and Gaz.*, Feb. 10, 1866.

In remarking upon the operation, Mr. Paget said that he believed that which he had just done was suitable in the very great majority of cases in which it was necessary to remove the tongue for cancerous disease. Two points, however, must be attended to in performing it. (1.) The attachments of the tongue to the jaw, both in front, where there were the genio-hyo-glossi muscles, and at the side, where it was connected by the mucous membrane, must be thoroughly divided, so that the organ could be well drawn forward; and (2) care must be taken that the tongue was divided perpendicularly through its thickness; unless there was a definite provision to prevent it, the section would pass obliquely from behind downwards and forwards, and thus parts that had better be removed might be left. An efficient plan was to transfix the tongue perpendicu-

larly with stout needles at the part at which the division was to be made, and to place the écraseur-wire behind these, so that it was made to cut vertically. There might doubtless occasionally be found cases in which the disease was situated so near the hyoid bone that it would be advisable to perform the larger operation recommended by Mr. Syme. Nevertheless, the écraseur operation allowed of complete removal of the sides and upper part of the tongue, and was therefore appropriate in the greater number of cases. The operation besides was attended with scarcely any risk to life.

The following is an extract from a clinical lecture lately given, on the subject of cancer of the tongue, at the hospital by Mr. Paget:—

"The motive to operate here, as in other cases, is either to prolong life, or, without shortening, to comfort what remains. For the first there is, I believe, some advantage—not a great prolongation of life, yet enough to justify an operation which is attended with very little suffering or risk. But the chief motive is in the hope of comfort, and the comfort that may be gained is, in many cases, so great as to justify a greater risk of life than is incurred in any of the ordinary operations for the removal of cancer of the tongue. The risk is really very small. I have not had a fatal case or witnessed one—there are few of even the minor operations of which I could say so much—and the comfort given is that the patient is delivered for the time from all the misery of one of the most distressing and disabling conditions of disease, and, till the cancerous growth is renewed, may enjoy complete health, and do all his work. Doubtless the disease will return after operation, but it is as unreasonable to refuse a painless operation, and one free from risk of life, because the disease will return at some time soon after it, as it would be to refuse a course of medicine because it gives only temporary relief. When a man has only, suppose, two or three years to live, it is no small advantage if at least half the time can be spent in comfort rather than in misery, and in profitable work rather than in painful idleness. Looking back on the many cases of cancer of the tongue that I have had to do with, I should be disposed to say that there is no organ on which operations for cancer are more justly performed, or are more to be urged, even in extreme cases.

"For the method of operating, the choice lies between cutting and the écraseur. Caustic is not to be thought of, unless in a case of the very smallest extent; and the cases in which the ligature should be used must be extremely rare. I have never employed it, for the only advantage which it offers, that of avoiding hemorrhage, is just as well, and much less offensively, obtained by the écraseur. The risks and troubles of hemorrhage are, however, much overrated, and I believe the knife may be preferred to the écraseur in all but the largest operations, such as those for the removal of the whole tongue."

—

28. *Excision of the Tongue.*—In our number for April, 1865, p. 500, will be found an account of a case in which Prof. Jas. Syme removed the entire tongue by excision on account of extensive disease of that organ. In a recent number of the *Lancet* (Jan. 27, 1866) the Professor gives a report of the then existing condition of the patient, showing the operation to have been eminently successful. The patient called on the Professor on the 10th of September, and announced who he was in a loud, clear voice. Very much astonished at the favourable state of the patient, the Professor requested a number of his medical friends to join him in examining the party. "Professor Goodsir and Mr. Nasmyth," he says, "having satisfied themselves that no vestige of the tongue remained, various observations were made with regard to articulation and other functions of the absent organ; and Mr. Annandale afterwards instituted a more particular inquiry, of which he has given me the following report:—

"'The lips and jaw-bone, where divided, were soundly united without any deformity. The opening between the mouth and pharynx was much diminished in size and irregular in shape from contraction of the fauces and soft palate, which were drawn downwards and forwards more to the right than the left side, from the mucous membrane at that part having participated in the disease and been removed along with the tongue. Mr. W—— says that he can swallow as well as ever, provided that the food is either finely divided or fluid. He is also able to masticate solid substances, although difficulty is sometimes experienced

from their getting into awkward parts of the mouth. In ordinary speech his words are wonderfully clear and distinct, and he can sing without any difficulty. All the vowels and words composed of them are articulated perfectly, and also the following consonants: B, C, F, H, K, L, M, N, P, Q, R, V, W. D is pronounced 'dthe,' J 'the,' G like 'sjee,' 'S' is a lisp. His taste is impaired, but still enables him to distinguish different articles and their respective qualities, as grouse from partridge, bitters from sweets, good beer from bad beer, &c. He has remarked that the seat of sensation lies somewhere in the throat, since there is no recognition of taste previous to the act of swallowing; and, in order to ascertain the truth on this point more precisely, the following experiments were made:—

"'1. A strong solution of salt was applied by means of a camel-hair brush to the fauces, palate, floor of the mouth, lips, and inner surface of the cheek, with the result of something being felt in the mouth, but no idea formed as to its nature.

"'2. About a quarter of a teaspoonful of finely-powdered sugar was placed on the floor of the mouth, and, having been allowed to remain there a few seconds, was then brought thoroughly into contact with every part of the cavity without any recognition of its nature; but when a little water was added and swallowed, the taste was immediately perceived.

"'3. The same experiment was repeated with another substance (salt), and with the same result.'

"It has long been known that large portions of the tongue may be removed without destroying or materially impairing the power of articulation, but I am not aware of any case on record in which it has remained so perfect after complete removal of the organ. Of the facts above mentioned, the one that seems most curious is the connection between taste and deglutition; from which it appears that the latter is essential for the full perception of the former. If the pleasure of taste could be perfectly gratified by mastication without deglutition, there would be no limit to the consumption of food; but the instinctive desire to swallow an agreeable morsel affords a check to any such abuse."

Prof. S. gives also a representation of the microscopic structure exhibited by the tumour, showing that it presented the characters of epithelial cancer.

A remarkable case of removal of the entire tongue by Mr. Nunneley will be found noticed in our preceding number, p. 259.

—

29. *Foreign Bodies in the Air-passages of Children.*—M. GUERSANT writes as follows on this subject in the *Bulletin Général de Thérapeutique* for September 15, 1865.

Foreign bodies in the air-passages may come from without or from the interior of the body; they are met with in the larynx, the trachea, or the bronchi. It is especially in children that they are observed; and they are of different kinds. The foreign bodies which come from the interior may be worms, which, ascending by the œsophagus, may pass into the larynx, and sometimes cause sudden death; or pus may come from an abscess in the neck; or a tuberculous product, first developed in a ganglion in the lungs, may penetrate into the larynx.

Foreign bodies may also come from the interior, having been first introduced from without; thus wounds in the chest sometimes give passage into the pulmonary tissue, to pieces of dressing, such as lint, etc., which then pass into the respiratory tubes; in the same way, pieces of necrosed bone may penetrate into the pulmonary tissue, to be expelled through the bronchi and trachea. A ball may follow the same path, in consequence of a wound in the chest. All such foreign bodies are often present without producing symptoms which may cause their existence to be presumed; still, when an abscess in the neck opens into the trachea, when retro-pharyngeal abscesses threaten to empty themselves into the larynx, or when foreign bodies enter from a penetrating wound in the chest, there are circumstances which put the surgeon in the way of forming a diagnosis.

Foreign bodies which come from without may be either fluid, soluble, soft, or hard. The fluids are water, wine, spirits, and all drinks. The soluble bodies are sugar, pieces of gum, pieces of sweetmeat of different kinds, pills, etc. The

soft bodies consist of food more or less masticated. The solid bodies are raw beans, nuts, pearls, teeth, pieces of bone, money, etc.

Symptoms.—The foreign body lies in the larynx, or rather in the trachea. The signs which it presents are serious in proportion with the youth of the child and the narrowness of the tubes.

If the foreign body be fluid, the phenomena that it causes are a sharp irritation, a convulsive and suffocating cough, a kind of suffocation and *râle*, which disappear quickly on the expulsion of the fluid.

If the foreign body be soluble or soft, it causes nearly the same symptoms. Immediately after the accident there is suffocation, and the patient may die upon the spot; but ordinarily there is a violent, harsh, convulsive cough, with threatening of suffocation, appreciable by the patient and by the physician. The voice is hoarse or inaudible; there are anxiety, a feeling of fear on the part of the patient, with pain in the respiratory passage, sometimes localized by the patient, at other times of uncertain seat.

If the foreign body be solid, these accidents persist and even augment in intensity; but they vary according to the consistence of the body introduced. Substances which are soluble, such as sugar, gum, barley-sugar, and other *bonbons*, sometimes only cause symptoms of short duration; they dissolve, diminish in size, and are quickly expelled by the efforts of cough. The same may occur, but more slowly, with pieces of masticated meat and of soft bodies in general. M. Guersant has seen a child eject, for several consecutive days, pieces of masticated meat, and thus relieve itself by fits of coughing. He has also seen the same thing occur in a child who had eaten a sugar-plum with the almond, of which the pieces had entered into the larynx and trachea.

But it is not the same with hard foreign bodies; the symptoms already described not only persist, but cause other symptoms. A pin or a fish-bone may implant itself in the larynx and produce very severe inflammation; bodies of this nature may remain fixed at one point. Round solid bodies have a tendency to change their place; and these bodies pass from the larynx into the trachea, or remain in the ventricles of the larynx when they are small, or descend into the bronchi. It is in cases of this nature that foreign bodies change their places, giving rise to intermissions of the symptoms, leading to the belief that no foreign body is present, because the most frightful paroxysms of cough and of suffocation are succeeded by a perfect calm.

When the foreign body is in the larynx, the symptoms vary less, because the body does not become displaced; but when it is in the trachea, it may ascend or descend. On placing the hand in front of the neck, a sensation is felt of a body which rises and descends in the trachea. Sometimes these bodies descend into the bronchi, and do not move. M. Guersant has had an opportunity of ascertaining the presence of a bean in the left bronchus; in this child, the respiration was heard in the right lung only, while in the left there was an absence of respiratory sound. An attentive observation of the respiration ought to throw light on the nature of the case.

When foreign bodies are left to themselves, either in the larynx or in the trachea, they may be expelled by natural efforts if fluid or soft; but when they are hard, and remain of the same size or even increase in size (as kidney-beans), the symptoms increase in intensity; the paroxysms of suffocation are renewed; the patient is sometimes convulsed; the face becomes livid; there is lachrymation; the veins of the neck are distended, and the trachea projects more than in the normal state; the child makes very energetic efforts at expulsion. Air accumulates in the lungs, and distends their parenchyma. In consequence of rupture, the air penetrates into the cellular tissue above the clavicles, and into the chest, producing pneumothorax, and death may follow slowly; but, all other things being equal, more quickly in children than in adults, because of the smaller size of the organs.

The *diagnosis*, by aid of the means pointed out, is often easy enough; but too much attention cannot be paid to all the symptoms described. It is necessary, also, to attach the greatest importance to the information furnished by the persons who were near the child at the moment of the accident, and who have

been witnesses of the first symptoms, as these are sometimes followed by the expulsion of the foreign body; in which case the symptoms which persist admit of delay.

It is very important not to confound the introduction of a foreign body into the pharynx with the introduction of one into the larynx. Ordinarily, in the case of a foreign body in the larynx, the pharynx and œsophagus are permeable to drink; but not so in the other. A bulky foreign body, however, such as a portion of a morsel of food may enter into the trachea, compress the œsophagus, and thus obstruct the passage into this tube, so that the patient cannot swallow without regurgitating. In a case of this kind, the trachea being distended by the foreign body, it is necessary to ascertain that the œsophagus is free, which may be done by introducing a gum-elastic sound into the alimentary tube; the substance, if in the œsophagus, may thus be pushed into the stomach, and the difficulty will be overcome, and the diagnosis rendered certain. If, on the contrary, this cannot be done, there will only be found in the œsophagus an obstacle, which cannot be pushed on; and it will be recognized that the trachea is distended, and compresses the alimentary tube.

Prognosis.—The severity in the case of foreign bodies in the air-passages varies with certain circumstances.

1. *Age of the Child.*—Very young children, a year old for instance, may meet with the most serious accidents, because of the narrowness of the larynx and trachea.

2. *State of the Health of the Child.*—A state of disease is unfavourable.

3. *Consistence of the Foreign Bodies.*—Fluids cause temporary symptoms only. Soluble bodies are less dangerous than soft; and hard bodies, which cause permanent symptoms, all present more or less danger. Those which have a smooth surface do not cause the same dangers as those which are pointed or rough.

4. *Size of the Foreign Bodies.*—They may, by their size, intercepting more or less quickly the passage of air, cause more or less rapid asphyxia.

5. *Duration of their Stay.*—When foreign bodies remain a long time, inflammatory or other complications are to be feared; but these may be prevented if they are removed at an early period. It is, however, known that foreign bodies have remained for months, or for years, in the respiratory tubes, and have been expelled by the efforts of nature.

Treatment.—When a child has a foreign body in the larynx, if the patient can be examined with the laryngoscope or Labordette's speculum, the foreign body, if at the entrance of the larynx, or even between the vocal cords, may possibly be seen with the aid of the last instrument, and seized with polypus-forceps. If this means be not at hand, the child should be placed with its head downwards, struck on the back, and caused to cough and cry. After this, emetics and sternutatories may be used, but without great hope of success; and finally, most frequently without delay, recourse must be had to laryngotomy, if it is thought that the substance is in the larynx, or else to tracheotomy, if it is believed that the foreign body is in the trachea or in the bronchi. In these operations, the rules must be followed which are laid down for the performance of tracheotomy in croup; and the surgeon must not forget to have at hand the small crane-bill forceps, as the foreign body may be impacted in a bronchus. Tracheotomy should be all the sooner decided on, as there is not such danger of failure as in croup, where the patient rarely recovers; indeed, in case of tracheotomy for foreign bodies, death is the exception, and recovery the rule. M. Guersant has had occasion to perform tracheotomy in five cases for the extraction of beans from the trachea; four patients recovered, and one died of pneumonia, who was operated upon sixteen hours after the accident. M. Guersant always applies simple dressing to the wound on the first day, and produces only gradual union. It may be united at once if the foreign body be expelled; and left open, and even kept open by a canula, if the foreign body still remain, and there be hope that it may yet be removed. After this operation, the surgeon ought to be on his guard against bronchitis and pneumonia; he should examine the chest daily, so as to be able to meet the earliest symptoms.—*Brit. Med. Journ.*, Dec. 2, 1865.

30. *Polypi of Larynx; Removal by Division of the Thyroid Cartilage.*—The following interesting case is related by Dr. Gilewski, of Cracow. A girl aged 16 came under his care, who had suffered during several months from hoarseness and noisy breathing (especially at night). At the anterior angle of the glottis were three polypous excrescences, partly of fleshy, partly of mucous aspect; one was larger than a pin's head, and the others were nearly of the size of peas. At each forced expiration they were carried somewhat backwards, but the epiglottis prevented them from being well seen with the laryngoscope. It was still more difficult, or rather impossible, to apply a ligature, on account of the violent reflex movements that were excited, and of the narrowness of the opening. It was, therefore, considered necessary to make an artificial opening for the removal of the tumours; and the operation was accordingly performed in December of last year.

The patient having been narcotized, an incision was made in the middle line of the neck, so as to expose a part of the thyro-hyoid membrane, the larynx, and the trachea as far as the second ring. No hemorrhage attended this part of the proceeding; and the patient had regained some consciousness. A sharp bistoury was now inserted at the upper edge of the cricoid cartilage, and the crico-thyroid membrane was divided as far as the lower border of the thyroid cartilage. Air escaped audibly through the opening. A probe-pointed bistoury was now introduced; and, the parts being held tense by a hook inserted above the second tracheal ring, the incision was continued to the upper border of the larynx. The patient began to cough and was very restless; but the hemorrhage was slight. Dr. Gilewski then held aside the divided parts by a hook inserted in the middle of each side of the wound, so as to be able to view the whole interior of the larynx. On making an inspection, Dr. Gilewski was astonished to find the mucous polypus, which had appeared as large as a pea, reduced to two small pale remnants of areolar tissue lying in the edges of the wound at the anterior angle of the glottis; near it was a nipple-shaped hard excrescence as large as a pin's head; it had a pale colour, as had also the neighbouring mucous membrane, which was in a slightly catarrhal state. No other tumour could be discovered; and the small one above described was removed by means of scissors. The disappearance of the larger tumour was attributed to its having been emptied of its contents, partly by the incision, and partly by the paroxysm of cough which attended the operation. A little watery fluid had been observed to escape when the incision was made into the thyroid cartilage. The operation was scarcely ended, when the patient fell into a syncopal state; this Dr. Gilewski attributed, not to the operation, but to the length of time during which anæsthesia had been kept up, and the quantity of chloroform which it had been necessary to use. She soon recovered under the use of ordinary means. The wound was united by strips of plaster, and a small dose of morphia was given. On the fourth day suppuration set in; and in the third week the external wound was closed. The patient remained free from fever; the breathing was perfectly easy; but there was some difficulty in deglutition. From time to time fragments of food entered the larynx, and were discharged by coughing through the external incision. As the closing of the wound advanced, the speech became more distinct; but there still remained some hoarseness, attributable without doubt to the fact that union took place much later in the thyroid cartilage than externally, and that the mucous membrane was in a congested state during the progress of the suppuration. On making a laryngoscopic examination four weeks after the operation, nothing could be learnt as to the condition of the parts, as the epiglottis was even still more inclined backwards than it had been. The cicatrix in the neck rendered the larynx fixed, so as to slightly impede deglutition. At the beginning of March the voice rapidly improved, and became clear and somewhat deep in proportion to the age of the patient. At the time of reporting the case, several months after the operation, there had been one transient return of hoarseness, attributable to acute catarrh.

In commenting on this case, Dr. Gilewski refers to the observations of Rauchfuss and Ehrmann, and expresses his opinion that in persons of advanced age there are not only great technical difficulties in the way of dividing the thyroid cartilage, but there is fear of the ready occurrence of perichondritis, and

even of suppuration of the entire cartilage. The operation is contraindicated if there be reason to suspect hardening or ossification of the part. The division of the cartilage is best performed by means of a sharply cutting probe-pointed bistoury, the larynx being fixed by a hook. A director seems especially useless, as the operator's attention must be directed to two instruments, and the larynx must be steadied by an assistant. Moreover, the vocal chords escape by lying on each side of the bistoury, whereas, if the knife slipped from the director, it would not be possible to avoid wounding them. The larynx is best held open by simple fine sharp hooks, one fixed in each side of the incision. The wound is best united by plasters; but, if it be very long, there would be no objection to a suture. Anæsthesia is advisable only in the first stage, until the larynx is perfectly exposed. Consciousness on the part of the patient is of important service, should there be any hemorrhage during the principal part of the operation. In Dr. Gilewski's case, there was scarcely any hemorrhage, and he believes that none of any importance can occur while the two halves of the larynx are held apart.—*Brit. Med. Journ.*, Sept. 30, 1865, from *Wiener Med. Wochenschr.*, June 28 and July 1, 1865.

31. *Wounds of Joints.*—Dr. WM. RUTHERFORD reports (*Ed. Med. Journ.*, Aug. 1865) some cases of this injury treated in the surgical wards of the Royal Infirmary, under the care of Prof. Spence, and concludes with the following remarks on the treatment of such accidents:—

"In treating a wounded joint, two objects are aimed at—to obtain primary union, and to prevent inflammation of the joint. For their accomplishment, local and general measures have been proposed, the former of which are the more important, and include rest, position, and cold.

"The employment of ice as the cooling agent is not a novel practice, but it is not so generally adopted as its merits appear to warrant.

"It is much to be preferred to irrigation with cold water, both because a *dry* cold is obtained, and a lower temperature produced, and because it can be much more easily and efficiently applied. With irrigation, the wound and surrounding skin are constantly kept in a sodden condition, so that primary union is frequently prevented, and a painful state of the skin often produced. Moreover, the patient is liable to catch cold, from his clothes and the supports of the limb being constantly kept soaking with wet; for, in the case of the knee and ankle, at least, it is almost impossible to confine the water to the limb, and prevent its wetting everything. With ice, everything can be kept perfectly dry, by inclosing the ice in gutta-percha bags, and by adopting the additional precaution of covering the wound with a large sheet of the same material, to prevent any accidental escape of water from reaching it. Were it even possible, however, to use irrigation without wetting the wound and surrounding skin, ice would nevertheless be preferable, on account of the lower temperature produced by it. When Cases 1 and 2 were under treatment, the supply of ice several times became exhausted, and during the intervals the joints had to be kept cool by irrigation, which was never adequate to prevent a rise in temperature, and the joints from becoming painful; the reapplication of the ice always depressed the former and removed the latter.

"The semi-anæsthesia produced by ice is generally sufficient to remove the pain until suppuration sets in; afterwards, its influence in that respect is not so decided. In order, however, to keep the patient at perfect ease, the bag must be promptly refilled as soon as the ice has melted; for, unless an equable low temperature be prescribed, pain is not completely removed; in some cases it is even exaggerated, and possibly the non-attention to this may, to some extent, explain the difficulty with which ice is borne by some patients of irritable temperament. The low temperature, so far from being hostile to the nutrient changes requisite for primary union, is, through its power of preventing inflammation, one of the best aids to primary union that can be adopted. During the late campaign in Schleswig-Holstein, the surgeons to the allied armies applied ice to all wounded joints, and to nearly every stump after amputation; and the general conclusion arrived at was, that where it was employed, primary union was more frequent and more extensive, and that the ensuing

suppuration was always less. These results ensued whether the ice was supplied only until the commencement of inflammation, as practised by Langenbeck, or when it was kept applied until the wound had almost entirely healed by the second intention. The practice of continuing the application of cold after inflammation has set in has generally been considered a dangerous one by the surgeons of this country; but, contrary to what might have been anticipated, the cases treated on the principles of Esmarck succeeded almost as well as those where Langenbeck's practice was adopted.

"Joints wounded by gunshot are, of course, much less amenable to conservative treatment than where the wound is simply incised. In the former case, to be sure, the wound may be of such slight extent, as regards the joint, that they are not very formidable. There occurred, however, in the above-mentioned campaign, a gunshot wound of the knee-joint, of a very serious nature, which was successfully treated by ice. The patient, a young man, received a shot on the outer side of the thigh; the ball passed obliquely through the outer condyle of the femur, down through the knee, and out through the inner tuberosity of the tibia. Ice was carefully applied for many weeks until the wound had nearly healed, and complete recovery *without* anchylosis followed. Langenbeck was of opinion, that the synovial membranes having, in all probability, escaped injury, had favoured the happy result; but he at the same time attributed the success very largely to the careful application of ice from the commencement. That ice, however, is not sufficient to prevent inflammation, even in those cases where the wound is incised and clean, was evident from Case 2. There, however, as previously stated, the patient's constitution was largely to blame. It would, however, be worth while investigating, whether or not a lower temperature than that produced by ice might not advantageously be employed in some cases where the tendency to inflammation is unusually decided, either from constitutional peculiarity or the nature of the wound. We do not as yet know the lowest temperature at which a part of the body in a normal state may be kept by *dry* cold, without serious interference with its nutrition; still less do we know to what depth of temperature a wounded part may be safely lowered. Should it be found that a lower temperature than that produced by ice can be borne, its production could be effected without much difficulty by the employment of various frigorific mixtures, graduated according to the temperature required; and they could without difficulty be prevented from coming in contact with the wound, by inclosing them in thick gutta-percha bags, and by laying a sufficiently large sheet of the same material between the bag and the wounded part. In applying ice to a wound, common bladders ought never to be used if gutta-percha can be obtained, as they very soon allow the water to ooze through, and, notwithstanding the low temperature, soon undergo decomposition; moreover, gutta-percha is cheaper, and bags can be made very easily, by simply wetting the margins of the pieces to be joined together with chloroform, and holding them in apposition until they dry. In the removal of loose cartilages from the knee-joint by subcutaneous or direct free incision, were ice constantly applied to the part after the operation until all tendency to inflammation had ceased, the serious consequences which have so frequently followed these operations hitherto would in all probability be frequently averted; possibly also its employment might often be found serviceable after subcutaneous section of tendons and several other operations."

32. *The Sequel in Some Cases of Excision of Joints.*—Perhaps the most interesting point connected with a surgical operation is the condition of the patient some years after its performance. It is exactly this point, however, which, owing to a variety of circumstances, is least often recorded. We are glad, therefore, to have the opportunity of noting the condition, at a very recent date, of some patients who underwent excision some years since.

In the year 1859, Mr. Thomas Bryant, of Guy's Hospital, excised the head of the right humerus from a man, aged twenty-three, on account of a chronic disease of the articulation of some months' standing. He adopted the single vertical incision through the deltoid muscle. The case did well. A few weeks since the patient came under observation, and it was learnt that he was then,

and had been for several years, engaged as a coachman, driving a pair of horses. The arm was about an inch and a half shortened, but little or no difference was presented by the two shoulders. The man said that he could use the right arm quite as well as the left; indeed that he could lift a heavier weight with it. He could readily raise it to, but not above, the horizontal line. Mr. Bryant is disposed to think that the line of incision employed has something to do with the successful result. By the plan adopted the deltoid muscle is preserved, its fibres being separated rather than divided.

In August, 1861, Mr. Bryant excised the head of the femur for extensive disease of that bone and disorganization of the hip-joint, in a boy aged five years. The case was fully reported in the *Lancet* of July 12th, 1862. The boy recovered, and has been seen at frequent intervals since. He has now a very useful limb. He can walk and run with facility, and stand upon the affected limb without inconvenience. The leg can be raised as high as its fellow, and rotated with perfect ease. The limb is nearly two inches shortened, but with a high-heeled boot the deformity is little noticed.

A carter, sixty two years old, came under Mr. Bryant's care in August, 1859, with disease of the right elbow-joint following an injury. There was great enlargement and pulpiness about the articulation, with numerous fistulous openings, through which exposed bone could be detected by a probe. Movement of the joint caused crepitation and great pain. The patient refusing to have the joint excised, the arm was fixed upon a splint at an appropriate angle, and constitutional treatment adopted. For three years he persisted in this treatment, but without improvement, and eventually in May, 1862, consented to excision, which was performed. The patient was very troublesome after the operation, refusing to wear a splint, and in other respects disobeying instructions. Nevertheless, a steady convalescence followed, the wounds healing, and the soft parts recovering their natural condition. In six months movement was complete, and he returned to his occupation. When seen recently, it was found that he had been engaged at his work without feeling any inconvenience. He could wield his whip with skill, and it was difficult (looking at the arm) to believe that excision of the joint had been performed.

A man, in whom Mr. Timothy Holmes, of St. George's Hospital, excised the shoulder-joint for extensive disease of the articulation about two years ago, is now employed as a gate-keeper at Kensington Museum. He has a wonderfully useful arm, being able to do almost anything with it. There is some motion at the seat of the joint, but Mr. Holmes thinks that in this and similar cases the essential power of mobility is derived from increased freedom in the movement of the scapula upon the back.—*Lancet*, Jan. 6, 1866.

—

33. *Trephining the Spine.*—In our number for October last, p. 537, will be found an interesting case of this operation performed by Dr. R. McDonnell, of Dublin.

Another case has recently (Nov. 28th, 1865) been reported to the Royal Medical and Chirurgical Society, by Dr. SAMUEL GORDON. This case is that of a man 31 years of age, who met with an injury of the spine on the 27th of March, 1865. He was thrown from a horse into a ditch while hunting, and was immediately affected with paralysis of the lower limbs, rectum, and bladder. When admitted into the Whitworth Hospital, under Dr. Gordon's care, these symptoms still continued, a bed-sore had formed, and there was incontinence of urine, which fluid was alkaline, and contained copious muco-purulent deposit. One of the vertebræ in the lower part of the spine was displaced. The extent to which the spinous process projected was shown in a cast exhibited. Dr. Gordon performed the operation of trephining at the patient's urgent request on June 3d. The operation lasted fifty minutes, and was not accompanied by much hemorrhage. Soon after the operation signs of improvement were noticed. On the fourth day after it the urine became acid, but this condition did not continue; sensation improved, and some days later there was observed an increase of motor power. After some time the urine, which was sometimes alkaline, sometimes neutral, became permanently acid, power over the bladder was restored, and the patient was conscious of the passage of feces. Within eight weeks he was

able to go out, reclining in a basket carriage. He has now regained control over the bladder, and he can sit erect with ease and comfort; but he cannot stand, or of course attempt to walk. His general health is excellent.

In making observations on this case, Dr. McDonnell draws attention to the following points:—

1st. There is nothing in the operation of a necessarily fatal kind; neither is it of necessity followed by exfoliation of bone, formation of matter, &c., which makes convalescence very tedious, if not impossible.

2d. He thinks that even those who do not advocate the operation in question must admit that in this case the operation was the cause of improvement.

3d. Judging from our present experience, he recommends that in future cases the operation should be performed early, before structural change has taken place in the cord, and the muscles have fallen into a state of atrophy, from which it is difficult for them to recover.

4th. He advocates removing the posterior arches of more than one vertebra as a proceeding which adds little to the difficulty or severity of the operation, and nothing to its danger, and which gives the patient a better chance of ultimately being able to stand and walk.

Mr. Spencer Wells stated that in the course of his service in the navy, and in the Eastern hospitals during the Crimean war, many such accidents had fallen under his (Mr. Wells's) notice, and he did not remember a single instance of recovery. Some lived several months in great misery, but he did not remember one patient who lived a year; and such cases as those alluded to by Mr. Barwell and Mr. Shaw must be quite exceptional. The only instance of recovery he had met with was in a gentleman who met with a fall when hunting. Inflammation and caries of the intervertebral substances and bodies of three of the dorsal vertebræ followed, and paralysis, which lasted two years. But recovery was so complete that the gentleman lived for twelve years afterwards, married and had a child, rode, danced, and shot, and only died last year of Bright's disease. The spine (which was exhibited at the meeting) showed that the whole of the body of one vertebra and half of two others had been destroyed, and that these two were very firmly anchylosed. Whilst this case proved the possibility of recovery, it was rather to be taken as an encouragement to Dr. Gordon and Dr. McDonnell that the man whose case was before the Society would completely recover power over his legs than as supporting the views of Mr. Shaw and Mr. Barwell in favour of non-intervention. It was very hard upon a surgeon, who might be blamed if an operation was not successful, to discourage him when it was successful by saying that the patient would have done just as well if he had been left alone.

Dr. R. McDonnell observed that he was greatly gratified, not only at having been able to be present, but at the discussion which this case had elicited. He expressed some surprise that those who were opposed to operation in such cases had not laid more stress on the mechanical objections urged against it by Sir Benjamin Brodie in his well-known paper, viz., that as the body of the vertebra was, in the vast majority of cases, the seat of fracture, and as this part was out of reach, no good could be gained by operative interference. It was quite certain that in such cases it was only that part of the vertebra against which the cord is pushed back that could be removed; it was only, in fact, possible to take away the counter-pressure. But this mechanical objection took no account of the cases which, although forming a very small proportion of the whole, yet sometimes occurred, in which the body is not broken, the posterior arch being the part fractured. Boyer had recorded such a case. While the operation of trephining the spine, as it is called, is set aside in practice, as it virtually has been, such cases must be lost which might otherwise possibly be saved. He did not conceive that any advocate for the operation would think of performing it in any case where the symptoms of compression of the cord did not exist. It would be less justifiable in such a case than it would be to trephine the skull when there existed no signs of compression of the brain. In reference to the case alluded to by Mr. Barwell, he could only say that the experience of those who had the largest opportunities of seeing such cases, as well as the shelves of the museums of Europe, showed how rare such cases were. In his own limited

experience, he had never been fortunate enough to see a case presenting such features as Dr. Gordon's case did just before the operation which had not run a fatal course. Dr. McDonnell did not think it probable that at a period of two months after fracture of the spine any considerable attempt at consolidation had taken place in most instances. It generally happened that the intervertebral substance was more or less lacerated, and the first thing nature does before setting about the work of consolidation, is to absorb the lacerated intervertebral substance. This is always accomplished slowly; and even when patients lived five or six months after the injury, consolidation was sometimes found to have made but little progress. Dr. McDonnell hoped, and, indeed, from the character of the discussion on the case just detailed he hardly doubted, that some of the surgeons connected with the hospitals of this great metropolis, profiting by the experience of his own and of Dr. Gordon's case, would undertake to perform the operation in question, and he earnestly hoped that, improving upon what had been already done in this field, they might obtain successful results.

—

34. *Ovariotomy in Relation to Disease of both Ovaries.*—Professor von SCANZONI, while admitting the great progress which has been made of late years in establishing ovariotomy as one of the great recognized surgical operations, calls attention to its inferiority as a means of radically curing a fatal disease when compared with other important operations, as the Cæsarean section, lithotomy, the larger amputations, and the ligature of great vessels. When the immediate danger of these has been triumphed over, the patient has a reasonable expectation of being cured of his disease; but thus much cannot be said of ovariotomy, owing to the probability of the second ovary being diseased. This point has been insufficiently inquired into, and the object of this paper is to call attention to it. At present, great difficulty exists in drawing any conclusion upon the matter, owing to the few accounts which we have of the after-history of those who have been operated upon. Thus, in Dutoit's statistical work, embracing 324 cases of successful ovariotomy, in only 34 instances is the state of the patient declared two years after the operation. No conclusion can be drawn from such insignificant numbers, and Professor von Scanzoni has endeavoured to throw light upon the matter by causing the register of the Würzburg Pathological Institute to be searched. In the course of fourteen years the autopsies of 99 cases of ovarian disease were recorded, and in 48 of these the disease was found existing on one side, in 51 on both sides; and von Scanzoni is convinced that this statement does not represent all the cases of disease of the ovary brought to the Institute, nor a sufficiently high percentage of double disease, this not being noted when slight and incipient. At all events, in one-half of the cases recorded the ovary was diseased on both sides; and this point, with the probability of relapse it implies, has been too little regarded by surgeons. These 99 cases are divisible into two groups, accordingly as the subjects had reached their fiftieth year or not; 52 of the number were below and 44 above that age, this point not being indicated in three cases. In the 52 cases both ovaries were diseased 31 times, or 59.6 per cent.; and but one 21 times, or 40.5 per cent. In the 44 cases, in 17 both sides, and 27 one side, were affected, or 38.6 to 67 per cent. A conclusion to be drawn from these figures is that, as double ovarian disease is of so much more frequent occurrence prior to the menopausis, the danger of relapse is much greater before than after that period—a fact to be borne in mind in considering the indications and contraindications of the operation. It may be said that if, during the operation, both ovaries are found diseased, they may be at once extirpated, and all danger of relapse obviated. In Dutoit's statistics this double operation is said to have been executed in 25 cases, with 11 recoveries and 14 deaths; and it is remarkable that this double operation should have been performed in so small a proportion of cases, seeing, from the statistics already adduced, that disease must have existed much oftener in both sides. Either the diseased condition of the ovary must have been overlooked, or fears were entertained of aggravating the danger of the operation, or hopes were entertained that the disease would not undergo a dangerous development. However, the double extirpation seems to have been followed by bad results in the few cases in which it was undertaken, for there were only 44 per

cent. recoveries to 56 per cent. deaths; while the entire number of ovariotomies recorded, 468, furnish 262 recoveries and 206 deaths, or 56 per cent. to 44—the figures being exactly reversed.

Professor von Scanzoni appeals to all those who may have the opportunity, and especially to the English surgeons, for their aid in a thorough examination into the point which he has raised in this paper.—*Brit. and For. Med.-Chir. Rev.*, Oct., from *Würzburg. Med. Zeit.*, No. 1, 1865.

OPHTHALMOLOGY.

35. *Changes which take place in the Fundus of the Eye in Progressive Myopia.*—Mr. Rouse read before the Western Medical and Surgical Society the following series of cases illustrating this.

Case 1. A girl aged 18, came in January last to the Ophthalmic Hospital. She had noticed myopia for six years; it had increased much within the last few months. She had tension in the left eye, with rings of light passing before the eye towards night, and obscure pain in the globe. The ophthalmoscope showed well developed crescentic posterior staphyloma on the outer side of the optic disk, between which and the yellow spot was great hyperæmia of the retina, also increased vascularity of the optic disk. Purgatives, blisters, cold douches, and omission of reading and needlework, removed the symptoms without increase of the staphyloma.

Case 2. A female, aged 25, had always (within memory) been myopic, and had used her eyes much for fine work. The right had been becoming worse more than five years, but during the last six or eight months so much so, that she could not see to work. She saw floating spots and flashes of light. The ophthalmoscope showed a small white optic disk, a well-defined staphyloma, and small yellowish white patches with pigment spots scattered over the fundus.

Case 3 was that of a myopic lady with cataractous left eye, and history of pain, flashes of light, and muscæ of many months' duration. The examination of the eye showed staphyloma, with congestion of the whole fundus and optic disk. The globe was rather tense, and there was some ciliary neurosis. Leeches, blisters, and purgatives relieved the tension and hyperæmia, but the flashes and muscæ still appeared from time to time.

Case 4. A woman, aged 40, of anxious temperament, found the sight of the right eye to be affected three days before she presented herself, and in a few hours it was quite gone. Her myopia had always caused her to hold her work four inches from her eyes; her sight was so acute that she was employed for the finest work. There was very little pain. On examination, one-half of the retina was found separated from the choroid, quite concealing the yellow spot and three-parts of the optic disk. In the left eye there was a small hyperæmic optic disk, but no posterior staphyloma. She was free from any organic disease of the viscera. Blisters and the iodide of potassium in two weeks removed most of the fluid. The detached retina was lying in a sort of fold. This patient is still under treatment, with, as yet, little improvement of vision.

Mr. Rouse said all symptoms in myopia should be attended to. It was an error that a near sight is a strong sight, and will improve. He showed that glasses were needed, and gave rules for their use. An occasional leech to the temple, purgative, and complete rest in a darkened room, were all useful. Paracentesis might be required. Myoptic patients should not hang their heads down.—*Brit. Med. Journ.*, December 16, 1865.

---

36. *Physiology and Pathology of Certain Forms of Dilated Pupil.*—Dr. Jos. Bell, Assist. Surg. Royal Infirmary, has published (*Edinburgh Med. Journal*, April, 1865) some interesting remarks on this subject.

"Mydriasis or dilated pupil," he remarks, "whether we consider it as a disease, or as a symptom merely, may result either—

"1. From paralysis of the sphincter pupillæ—M. paralytica.

"2. From irritation or contraction of the radiating fibres—M. spastica.

"Under these two heads I will briefly group the chief maladies in which mydriasis is present.

"1. M. paralytica—with partial or complete paralysis of third nerve, very frequently accompanied by ptosis, and rarely by protrusion of the eyeball from want of muscular tension.

"*a.* Ordinary cases of ptosis, resulting from periostitic nodes, either syphilitic, or simply rheumatic.

"I would specially refer to some cases recorded by Mr. Workman, in vol. iv., part first, of the *Ophthalmic Hospital Reports.*

"*b.* Cases of brain disease or injury accompanied by compression, as in certain cases of hydrocephalus. See Mackenzie under the head of 'Hydrocephalic Amaurosis.' And this also explains the dilated pupil, so well known as a symptom of traumatic compression of the brain from hemorrhage.

"*c.* Result of intra-ocular pressure, in cases of glaucoma, with excessive hardness and tension.

"*d.* Cases of actual paralysis of the sphincter pupillæ itself, the result of excessive tension during the removal of the large hard lens in the operation of extraction.

"*e.* The well-known dilatation, the result of sudden and excessive retinal apoplexies. The very existence of such cases was unknown till the ophthalmoscope cleared them up, before which they had been called sudden cases of amaurosis, or perhaps had been put down to the credit of mydriasis simple, the dilatation being the only visible change.

"Perhaps it is better to ascribe the dilated pupil, in these last cases, rather to the fact that the retina no longer receiving the stimulus of light, or at least being unable to transmit it to the brain, the third nerve does not receive any impulse from the brain, and therefore does not contract the pupil, than to the idea of the retinal apoplexy producing any intra-ocular pressure.

"2. M. spastica—from irritation of the fibres of the sympathetic which supply the radiating muscular striæ.

"Such cases are much rarer, and not so well authenticated.

"*a.* Cases of dilated pupils coincident with the existence of worms, and other gastric derangement in children.[1]

"*b.* Soelberg Wells, in *Ophthalmic Hospital Reports*, ii. 304, refers to an observation of Graefe's, who had pointed out that mydriasis specially of one eye sometimes precedes mental alienation.

"*c.* We may perhaps include here some of those rare and curious cases in which pain in, or extraction of, a tooth has been followed by total and sudden blindness, with fully dilated pupil. One of the earliest recorded cases is to be found in Wirgman's translation of *Heister's Observations*, p. 193; the date of the case is 1712.

"Now, the cases I have recorded here cannot well be classed under any of the preceding heads which I have so briefly sketched. They have all occurred in strong, otherwise healthy patients, in whom there was *no* evidence of any cerebral change; no muscular paralysis; no ptosis, protrusion, or strabismus; very little or no intolerance of light; from the immediateness of the cure, there could be nothing glaucomatous; and in all the cases one eye only was affected.

"Like the scrivener's thumb, I believe it is a case of peripheral, not central, paralysis. Two *certainly*, the other two cases probably, had been under special circumstances of overwork. It is not hard to find an explanation of the paralysis being confined to one eye only, when we remember how often a very slight difference in focal length or adjusting power causes the whole of the work at a given distance to be thrown on one eye only. This also explains the manner in which the Calabar bean, as a local excitant to the ciliary nerves supplying the sphincter pupillæ, causes a cure, in the same manner as atropia is now nearly universally acknowledged to act both locally and generally as an excitant of

[1] Plenck (Vienna, 1783) speaks of M. verminosa, "quae a saburra verminosa primarum viarum nascitur."

the vaso-motor system of nerves. On this cognate subject, I would refer to the papers published in the *Edinburgh Medical Journal* for 1857, by Mr. Bell.

"So far, then, good. Granted your local paralysis of the iris, the Calabar bean, your local excitant, sets *it* working again; that is surely enough. You get the pupil to contract, vision is restored; it is solely a paralysis of the iris, and of it only the circular fibres. If I were to stop here, I would stop too soon—fail to illustrate a very interesting physiological point, and give an argument in favour of a theory which I firmly believe to be wrong.

"For, could we say it was the iris alone that was paralyzed, we would have paralysis of the iris causing want of accommodation, removal of the paralysis restoring accommodation, a very important contribution indeed, were this the case, to the vexed question of the agents of accommodation. It stands, briefly, somewhat thus:—

"1. Is accommodation of the eye to distance the result of a change in the *position* of the lens, or in its *shape?*

"2. Is the change, whatever it be, the result of the action of the muscles of the eyeball, of the iris, of the ciliary body?

"Without going into detail, I merely remind you that Cramer stands up for the iris as the chief agent; and at first sight these cases of mine would seem to favour this view. But—

"1. Von Graefe has put on record a case of very great interest, in which the whole of the iris was removed. Yet, vision in that eye, a very few days after, was found remarkably good, and the accommodative power *almost* perfect. I would also refer you to a very interesting case recorded by Mr. George Lawson (*Ophthalmic Hospital Reports*, iii. 272), of congenital absence of the iris in both eyes, in which accommodative power was fair, and very much better than in the mildest case of the form of mydriasis at present under your notice.

"In short, we may almost go the length of the observation by Becker (translated by Windsor, and abstracted in the third part of vol. iv. of the *Ophthalmic Hospital Reports*), 'the motions of the ciliary muscle and iris are associated and occur in co-operation, yet the iris has no direct influence over the alterations in the form of the lens;' and,

"2. The following point of great interest was noticed on every occasion of the use of the Calabar bean in the cases under review, that vision and accommodation were restored a few minutes *before contraction of the pupil commenced at all.* This was observed by Dr. Argyll Robertson, in his experiments with the Calabar bean on his own eye, that vision was affected and rendered myopic before the pupil was visibly altered. We are thus driven to look for something else by which to explain the symptoms and their removal, and we find it in the *ciliary muscle.*

"Supplied by the third nerve, like the sphincter pupillæ, it sympathizes with the iris in its troubles, and also in its relief; and it has, what the iris has not, a very special function in the mechanism of accommodation. Though not so visible, the action of the Calabar bean solution, applied locally, is more rapid on the ciliary than on the iris, and by the removal of its paralysis the power of accommodation is most rapidly restored.

"While on the subject of dilated pupil and its treatment by the Calabar bean, I may just notice other means that have been used for its relief. Opium dropped in, with very little success. Attempts to cause contraction of the pupil by irritation of the branches of the fifth, which are supplied to the eyebrow and nose. Admission of bright light into the affected eye is more apt to injure the retina than to cause contraction. Use of convex glasses for reading small print held near the eye. None of these, in their results, have proved either so rapid or so satisfactory as the local use of the Calabar bean.

"There is an interesting but somewhat rare accident, hitherto irremediable except by mechanical means, which this same agent may probably render amenable to treatment. I refer to those cases in which, from blows on the eye, the inner free margin of the iris is ruptured, and *part* of the sphincter pupillæ at least is rendered useless, followed by dilatation of the pupil and disturbance of vision. This is not nearly so common an accident as detachment of the ciliary border, but still is frequent enough to deserve comment.

"Experience has yet to show us how far the early and persevering use of the solution of Calabar bean may avail in restoring contraction, or, at least, in preventing excessive dilatation. It is true that such cases are frequently accompanied by, and complicated with, retinal detachment and extravasation, but the dilatation has been found to be very lasting and extremely annoying.

"Mr. White Cooper has recorded three interesting cases of this accident in the *Association Journal* for 1855. The only palliation hitherto discovered has been the use of an artificial diaphragm, consisting of a spectacle frame fitted with an opaque plate, and containing an aperture corresponding to the pupil, either circular or a mere transverse slit.

"Experience alone will prove the value of the solution of the Calabar bean in such cases, but it is certainly well worth trying. The cases I have recorded in this paper have proved its power in the treatment of unilocular mydriasis."

37. *Atropia Points.*—Mr. J. Z. LAURENCE has lately had made pencils or points impregnated with atropia which he says recommend themselves by their simplicity and portability. These atropia points are like nitrate of silver ones, adaptable into wooden holders, and may be carried in the waistcoat pocket. If one of these be lightly pressed once or twice over the conjunctiva of the lower eyelid a sufficient quantity of atropia is washed off to dilate the pupil.—*Ophthalmic Review*, Jan. 1866.

MIDWIFERY.

38. *Use of the Wire-Ribbon in some Cases of Difficult Turning.*—Dr. HEYERDAHL, of Bergen, communicated to the Edinburgh Obstetrical Society a paper on this subject. He states that he was attending in the country a case of transverse presentation which had gone on for a considerable time unrelieved—the waters had flowed away two days before. "The pains had been rather energetic for the last twelve hours, with strong bearing down. I found the left shoulder presenting low down in the vagina, and considerably swollen; the uterus and os firmly embracing the fœtus. The fœtal heart was heard indistinctly about the umbilicus. I put the woman—a strong primipara at the term of gestation—under the influence of chloroform, and proceeded to turn. It was impossible to push the bulk of my hand into the uterine cavity, although the bearing-down pains were very much lessened; but with two fingers within the os I reached and got hold of one foot, aiding this purchase by forcing the pelvic extremity of the fœtus lower down with the other hand. So far I succeeded; but I soon found that I wanted strength enough in my finger to bring the foot farther down than to the brim, the foot being in such a degree slippery that I lost my purchase every time I tried to pull down. At the same time it was impossible to raise the presenting shoulder up to get a little more room. I tried in vain to bring up a tape round the ankle. I failed repeatedly on account of the looseness of the tape, moistened in the discharges from the vagina."

It occurred to him to try wire-ribbon used by milliners to shape bonnets.

"I took," he says, "about a yard of wire-ribbon, half an inch broad, doubled it up, and formed it into a running noose. I made the loop a little elongated, and large enough to slip a foot through, and twisted the free ends a little to give them more stiffness. I now succeeded in sliding the well-oiled running noose of wire-ribbon up to the foot, and to get a firm hold of it, and then, by moderately pulling on the foot, securely grasped in this manner, and at the same time pushing the presenting shoulder upwards with the other hand introduced into the vagina, I was fortunate enough to turn in no time. Soon after, the child was born by nature alone, with the exception of a little manual force to extract the head. The child was dead; but the patient did well, according to the report given me two days thereafter.

"This case is, I think, of some interest for the practitioner, because it proves that the difficulty of grasping the foot high up in the vagina by a running noose

of tape—sometimes baffling our best endeavours—may be overcome without instrument in so simple a manner, namely, only by substituting the material commonly used, tape, by another equally simple material, wire-ribbon, to be procured wherever bonnets are worn.

"Of course the method of applying wire-ribbon may be modified in different ways; for instance, by doubling the wire-ribbon, then twisting it in its whole length, only the uppermost portion being left untwisted and forming a loop. To the other end is fixed a handle, made of a small piece of wood. This little apparatus is used in the same manner; the only difference is, that the loop is tightened by augmenting the number of twistings by turning the handle. The material possesses this quality, that the twistings, once made, do not untwist again, and thus the foot is securely and firmly grasped.

"But I am inclined to think that the method put into execution in my case is perhaps the simplest, and, therefore, also the best.

"Should the stem of the running noose give too much during its introduction, this inconvenience may be remedied by using a small surgical forceps to introduce it with.

"There is one drawback to its use: wire-ribbon is sharper and more apt to cut than common tape, and I was obliged to protect my hand by means of a handkerchief. Around the ankle of the child was left a deep furrow, but it had not cut through the skin.

"By applying the wire-ribbon running noose to the feet of the dead body of the child, I was not able to cut through, although I purposely used much more force, and for longer time, than advisable in any circumstance connected with the operation of turning a living child.

"If instruments can be dispensed with, it may be a step in advance in the technosis of turning, and worthy the notice of the profession."—*Edinburgh Med. Journ.*, January, 1866.

---

39. *Influence of Chlorate of Potash on the Life of the Fœtus in Utero.*—Dr. Bruce read before the Edinburgh Obstetrical Society a paper on this subject, and read accounts of six cases in which he had used that article with a view of prolonging the life of the fœtus.

These, he says, "are all the cases I can refer to at present, and they are much too few to draw any satisfactory conclusions from; but I think they are interesting, in so far as some of them, under the use of the chlorate of potash, ended so much more satisfactorily than they had ever done before, where some had become mothers of healthy children, which a succession of previous miscarriages had well-nigh made them despair of. How far these cases may have been influenced by the remedy employed I will not venture to say, but the result of the practice appears to me to be of an encouraging nature; and in any other cases of the kind which may come in my way, I shall feel strongly inclined to follow out a similar treatment."

Dr. And. Inglis said he had never seen the chlorate of potash fail. Even in one case, where, after sixteen still-born children, the seventeenth was born alive.

Dr. Sidey thought it was always useful.

Dr. Cairns mentioned a case where a woman had aborted five times, but after the use of this medicine she carried her sixth child to the eighth month.

Dr. Moir stated that he had used chlorate of potash in very many cases, and thought it did good.

Dr. Keiller remarked that he had very frequently administered chlorate of potash, for the purpose of preserving the life of the child in utero until the period of its viability, if not to the full time, and his experience led him to continue the practice. It was a matter very difficult to determine whether any undoubted evidence existed to prove that the mother's blood was oxygenated by the use of the chlorate of potash to the extent of acting on the placental structures, or their circulating fluids, so as to influence in any degree the vitality of the child. It might be as he (Dr. K.) had, on former occasions when this matter was before the Society, hinted at, that the health of the mother happened to be in better condition on the particular occasion when a living child was born, or that the patient's health was benefited by the alterative or tonic influence of the salt

referred to, without the supposed directly oxygenating effect of the remedy on the blood of the child. The condition of the mother's health was not specially mentioned in the cases cited by Dr. Bruce; but he (Dr. K.) thought it important to take this into consideration while estimating the value to be attached to the use of the chlorate. Dr. Keiller had often noticed that the health and spirits of females treated in this way improved very materially; this might be partly brought about by the taking of a remedy likely to promote the chance of ultimately getting a living child, for we all know the wonderfully tonic power of lively hope on the one hand, and the depressing influence of mental anxiety and dread on the other. The mere giving of a something, and the encouraging the idea of its remedial power, often acted like homœopathic charms, the patient being induced to go more about, and thus, also, favour the chances of the general condition of her health being improved. Dr. K. had at present a case in hand, the result of which he would afterwards communicate to the Society. The patient had lost seven children, and was now between six and seven months in her eighth pregnancy. She had, for the second time, come from Australia to undergo treatment likely to lead to the desired end of having a viable child. The patient was now taking the chlorate of potash in much larger doses than those spoken of by Dr. Bruce. For some time past he (Dr. K.) had been in the practice of administering the chlorate to the extent of several drachms daily in a very diluted form, the patient using it freely as a common drink.

It was very important, while watching the progress of cases, to beware of being misled by the *active movements* of the child to which Dr. Bruce had referred, as if this amounted to unfailing evidence of its safety. It often happened that immediately preceding death the fœtal movements became convulsive, or unusually strong, which, indeed, in many cases was a suspicious sign. This ought studiously to be kept in mind, for although gradual feebleness or loss of movement was usually the most noticeable sign of the child's dying, extreme or convulsive plunging frequently indicted the advent of death.

The condition, not only of the child, but of the uterine circulation, as ascertained by the use of the stethoscope, ought to be frequently seen to, and the general or constitutional evidence of fœtal danger or death should in such cases be observed.

The frequency of syphilitic influence as a common cause of fœtal death demanded our attention and remedial care. At the same time, the chlorate of potash, if it did not do away with the necessity of administering other or more special syphilitic remedies, did not interfere with their use in cases where constitutional taint from syphilis was found or supposed to exist.—*Edinburgh Med. Journ.*, January, 1866.

—

40. *Procidentia Uteri.*—Dr. J. MARION SIMS read before the Obstetrical Society of London (Dec. 16, 1866) a paper on this affection. He said that a procidentia was complete when the vagina was inverted and formed its outer covering—incomplete when the cervix only passed through the vulva; that a broad pubic arch, divergent rami, a relaxed perineum, and a retroversion, were essential to its production; that in some cases the infra-vaginal cervix was elongated, and came down first, but that in the majority of chronic cases a vagino-cystocele formed the first stage of procidentia. For the first he advocated amputation of the cervix, and said this was generally alone sufficient; but for the second he preferred to narrow the vagina. This idea, he said, originated with Marshall Hall; but he did not think the operation had ever succeeded till the introduction of metallic sutures. He then gave an account of the operation from the time he first performed it in 1857 till now, showing its gradual advancement to its present state of perfection. He illustrated the subject fully by diagrams. In 1857 he narrowed the anterior wall of the vagina by exsecting a large ellipsis of it, and then bringing the lateral borders together with silver sutures. Afterwards he simply denuded the surface of its epithelial membrane; then he simplified the operation by making a V-shaped scarification; and consequently he made it trowel-shaped or triangular, the point being at the neck of the bladder, and the broad portion in juxtaposition with the cervix uteri. In all these methods, the object was to remove the cystocele, and afford a support

to the parts just at the anterior cul-de-sac. By diagrams he illustrated the method of operating, and claimed for it, when properly done, the greatest success. He did not pretend to institute a comparison between this and the perineal operation for the same trouble; but he had been driven to work out this plan in consequence of having often failed with the other. He only wished to add another resource to our means of curing such a disgusting infirmity, for we now had three methods: 1st, amputation; 2d, the perineal operation; 3d, the narrowing of the vagina, as advocated by him.

Dr. S. said that no one method of operating could be applicable under all circumstances to all cases. If there was a lacerated perineum, it was proper to restore it. If there was elongation of the infra-vaginal portion of the cervix, then the proper operation was amputation of the cervix, and this was probably all that was necessary in such cases. In the majority of cases of procidentia—in all those where a vagino-cystocele formed the first stage of descent—he was satisfied that the operation he had described, viz., that of narrowing the vagina by forming a longitudinal fold of its tissue on the anterior surface, reaching from the neck of the bladder to the neck of the womb, would be one of the safest, simplest, and best.—*Lancet*, Dec. 16, 1865.

HYGIENE.

41. *Application of Ozone to Sanitary Purposes.*—Dr. John Day describes (*Lancet*, February 3, 1866) the following simple and inexpensive method of generating ozone and of applying it to sanitary purposes:—

"Schönbein found that a little pure ether put into a bottle filled with oxygen or atmospheric air, and exposed to diffused light, the bottle being occasionally shaken, had partially changed its nature after a lapse of four months. Although producing no action on litmus paper, it discharged the colour of a solution of indigo, converted phosphorus when immersed in it into phosphorous acid, eliminated iodine from iodide of potassium, &c.; thus showing that it had acquired many of the properties of ozone. This discovery led to a mode of forming ozone by moistening the interior of a bell-glass receiver, or a large-mouthed bottle, with ether, and plunging into it a glass rod previously heated in the flame of a spirit lamp. On experimenting, some few weeks since, with ozone formed in this manner, I was surprised to find that, at the expiration of ten days, the bottle I had used, although open and freely exposed to the air, was still highly ozonized. I then ozonized a large glass vessel by the same process, and in the course of a few minutes thoroughly rubbed the interior with a towel, and found that, although the towel had become ozonized, the glass vessel still retained its power of liberating iodine from iodide of potassium, of decolorizing sulphate of indigo, of destroying sulphuretted hydrogen, &c. These properties were retained by the glass vessel and the towel for several days.

"Viewing ozone as oxygen in a dynamical condition, its increased activity giving it the power of rapidly converting the products of animal and vegetable decomposition into innocuous compounds, I began to test the power of this chemical ozone in a privy, the atmosphere of which was highly charged with sulphuretted hydrogen and probably other deleterious gases. Before commencing operations, I placed a vessel containing a weak solution of permanganate of potash on the seat, the lid being raised. In an hour the colour was perfectly destroyed. I then placed large glass jars, which had been ozonized by means of ether and a hot glass rod, in several parts of the privy; and by this, and other methods about to be described, I have kept the atmosphere so pure that a solution of permanganate of potash of the same strength as that first used will retain its colour for several days. On finding that cloths could be ozonized by merely rubbing them over an ozonized surface, I began to suspect that heat was not absolutely necessary, and on pouring a small quantity of ether into a

wide-mouthed bottle, it immediately afforded ozonic reaction, which continued active for a considerable time. I have since found that sheets, blankets, beds, clothing, bandages, lint, carded cotton, paper, and many other materials may be ozonized by simply pouring a small quantity of *a certain kind of ether* over them. Unfortunately I am not able to describe what that particular kind of ether is, but believe it to be very old ether which has absorbed a good deal of oxygen, that process having been favoured by exposure to light. Out of upwards of thirty samples of ether which I have examined, I have only found one to answer the purpose thoroughly, and this I know was imported into the colony about eight years since. Of the other samples three or four answered tolerably well, and many gave no ozonic reaction at all.

"It is well known that oil of turpentine has the property of generating ozone. How it does so has not been satisfactorily explained. Some chemists consider that the oxygen of the atmosphere is converted into ozone by contact with the vapour of the turpentine; but this, like everything connected with ozone, seems to be veiled in mystery. I have found that many substances, particularly those which are known as disinfectants, will, under certain conditions, generate ozone. I have succeeded with the vapour of cajeput oil, carbolic acid, creasote, pyroligneous acid, kerosene, naphtha, coal-tar, and chloroform, the reaction from chloroform being very feeble.

"The question naturally occurs, Is it really ozone—active oxygen—that is generated by my simple process? I believe it for the following reasons: It rapidly destroys sulphuretted hydrogen; it converts sulphite of lead into sulphate; it liberates iodine from iodide of potassium; it possesses powerful bleaching properties, and quickly decolorizes a solution of sulphate of indigo; it oxidizes iron and silver when they are slightly moistened; it coagulates albumen and casein, altering their colour, and giving to them a greenish tinge; and it induces intense headache and sore-throat when it is breathed for any length of time.

"The normal amount of ozone in the atmosphere has not yet been determined. It must, however, be very small. It has been given, I think, by Dr. Bérigny, of Versailles, as one part in ten thousand. It is known to be more plentiful in the open country than within the confines of towns and villages, and it is also known to be almost entirely absent from inhabited houses.

"Now, it appears to me quite possible that the sanitary condition of hospitals, factories, schools, and indeed of all establishments in which the atmosphere is liable to become vitiated, may be greatly improved by the occasional presence of artificially generated ozone."

—

42. *Deodorization and Disinfection.*—The Hastings Prize Essay for 1865, on this subject, by Dr. THOS. HERBERT BAKER, is published in the number of the *British Medical Journal* for January 6, 1866. The following is a summary of the author's conclusions:—

1. For the sick-room, free ventilation, when it can be secured together with an even temperature, is all that can be required.

2. For rapid deodorization and disinfection, chlorine is the most effective agent known.

3. For steady and continuous effect, ozone is the best agent known.

4. In the absence of ozone, iodine exposed, in the solid form, to the air is the best.

5. For the deodorization and disinfection of fluid and semi-fluid substances undergoing decomposition, iodine is best.

6. For the deodorization and disinfection of solid bodies that cannot be destroyed, a mixture of powdered chloride of zinc or powdered sulphate of zinc, with sawdust, is best. After this, a mixture of carbolic acid and sawdust ranks next in order; and, following on that, wood-ashes.

7. For the deodorization and disinfection of infected articles of clothing, etc., exposure to heat at 212° Fahr. is the only true method.

8. For the deodorization and disinfection of substances that may be destroyed, heat to destruction is the true method.

43. *Utilization of Fecal Matter.*—Dr. LECADRE, Vice-President of the Council of Public Hygiène and Salubrity of the Arrondissement of Havre, from a study of the different measures employed or proposed to utilize for agricultural purposes human excretions, arrives at the following conclusions:—

1. Rivers and canals existing in great cities ought not, under any circumstances, to serve as drains for sewage: they ought solely to be taken advantage of, in this respect, as affording facilities for transporting it to districts where it may be used for fertilizing purposes.

2. The state of the Thames, poisoned by the sewage of London, should not be forgotten. It is contrary to all the laws of public health to suffer a river or canal thus to become polluted, and to all the laws of good economy to lose thus gratuitously a product so rich and precious.

3. The tubular system of drainage, although it has been happily applied to several parts of England, has not yet been sufficiently studied; and it is so expensive that few cities in France could support the cost.

4. Hidden cesspools become sooner or later infected foci of putrid emanations; by the infiltration to which they give rise they may poison springs and wells; and they may even compromise the foundations of buildings.

5. It is necessary to return to the primitive system of movable receptacles, or tubs and fixed receptacles; and of the last named the receptacles above ground are better than those beneath the surface; but in all cases fixed receptacles ought to be walled, cemented, water-tight, and sufficiently ventilated.

6. Wherever canals and rivers exist, they ought to be used for the transport of barges, which would convey the contents of the cesspools to the river-side communes.

7. France, Belgium, England and Holland, are covered with railways, by means of which sewage might be conveyed by night, in closed movable reservoirs, to the adjacent lands.

8. It is desirable that there should be formed in each department, as in Lyons, a syndicate, to further economically, to the profit of health and agriculture, the dissemination of the town sewage in rural districts.

9. It is necessary to avoid great depôts of fecal matter, such as exist near Paris and Havre, and many other cities, and which exceed the actual needs of agriculture; and it may be hoped that, from the facility of transmission and greater perfection of subterranean conduits, the necessity for these depôts will cease.

10. Fecal matter loses much of its offensive character, whether in course of transport or at rest, if covered with dried, powdered earth, provided that this be argillaceous, or rather burnt according to the process of M. Salmon, or, still better, mingled with charcoal, as M. Maxime Paulet suggests. It may thus be disinfected on the instant.

11. Now that chemical studies lead to the discovery of new disinfectants, it is probable that, as in the case of sulphate of iron, already known for this property, other salts will be found still more effective for instantaneous disinfection, and which, like this preparation, will not prove injurious for agriculturists.—*Half-Yearly Abst. Med. Sciences*, July—Dec. 1865.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

44. *Death from Chloroform.*—Dr. J. D. GILLESPIE relates (*Edinburgh Med. Journ.*, January, 1866) the following interesting case of this. Last November he was sent for by a lady aged 17, to extract an upper molar tooth which was giving her great pain. He persuaded her to endure it some time longer. Some days subsequently he saw the patient again and found her in a great state of excitement. She begged for an anæsthetic before the tooth was drawn, and as Dr. G. had none with him some was sent for from the nearest druggist.

"Having ascertained," Dr. G. states, "that the patient's clothes were loosely

fastened, and with another young lady and a servant in the room to give assistance if necessary, I placed her in a recumbent position on a sofa, sprinkled a small quantity of chloroform on a napkin, and commenced its administration. This I did by holding the napkin at a short distance from the face. She had not taken above a very few inhalations when she became violent, struggling, and screaming out very loudly, as if she felt the extraction of the tooth. Having got a very small further supply of chloroform on the napkin, I was proceeding to administer it, when I thought she was sufficiently unconscious, so put it aside, and, taking up the forceps, found further operations impeded by the jaws being firmly clenched. I managed, however, to force them open, applied the forceps, and extracted the tooth. I then rose from the side of the sofa, and went to the table, which was scarcely a yard distant, to get a tumbler of water to make her wash out her mouth, when I was startled by one or two long gasping respirations, the peculiar character of which I cannot explain, but which I have only heard when a patient was dying. Alarmed, I dashed some cold water over her face, which was deadly pale; examined the pupils, and found them greatly dilated; pulled out the tongue, which was not, however, retracted; felt for a pulse, but in vain, and then became convinced she was hopelessly dead.

"I commenced artificial respiration at once, and owing to the very elastic character of her chest, I felt that air freely entered under my manipulations; the hands were placed in hot water, and the feet and chest vigorously rubbed. Her brother was despatched to try and find additional medical assistance, and, in certainly less than five minutes, Dr. Graham Weir, who was in the immediate neighbourhood, entered the room. We continued our efforts for about half an hour, but to no purpose, the pupils still retaining their dilated state.

"The amount of chloroform altogether employed by me was 50 minims, and of this not more than a half, I should say, was actually made use of for the purpose of inhalation."

On *post-mortem* examination "nothing whatever abnormal was found, save that the left ventricle of the heart was very firmly and unusually contracted, and that it, as well as the left auricle, was perfectly empty. The right side of the heart was not gorged with blood, and there was no clot in any of the cavities. The lungs were quite natural in appearance, as also the brain, and all the other organs."

—

45. *Respiration and Signs of Life in a Fœtus delivered at about Five Months' Gestation.*—Dr. J. D. MOORE relates (*Lancet*, Nov. 11, 1865) a case of this, which is of interest in a medico-legal point of view, with reference to succession or inheritance of property.

He was called to a woman who was flooding. "She had at that time a child ten months old, which was still suckling. The catamenia had appeared regularly since her last confinement, until last month, when they were absent. On examination, I found the membranes containing a fœtus protruding from the vulva. They burst almost immediately, and I removed the fœtus, and placed it, partially inclosed on the membranes, and with the placenta still attached, in a vessel of water which happened to be at hand, as the mother at that time required all my attention. In about twenty minutes I took it from the vessel, where it had been completely covered with fluid, in order to examine it, and while taking its measurement felt and saw distinctly pulsation both in the thorax and fontanelles, and, after watching it for a few seconds, saw it open its mouth and make inspiratory movements as if gasping for breath. The pulsation continued for some time, even after I had wrapped it in a napkin and carried it to my residence (about five minutes' walk), where it was also witnessed by several other medical men. The fœtus was from six and a half to seven inches in length, and probably of not more than five months' gestation."

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Case of Prolapsus Recti Successfully Treated. By JOHN PEACH, M. D., of Collington, Md.

In the spring of 1865, I was called to see a negro child about three years old, whose rectum had been prolapsing with each evacuation for more than a month, but at the time I saw the case had been permanently so for a week or ten days. The tumour was about the size of my fist, and tightly constricted by the sphincter. The whole surface was bloody and excoriated, with ulcerated patches in several places. It was with much difficulty reduced by cold applications and prolonged taxis.

The patient was put upon a semi-fluid diet; his bowels kept open, and astringent and anodyne injections thrown into rectum. On the next day I found the rectum again prolapsed, and returned it with even more difficulty than at first. This state of things was repeated for several days in spite of treatment and sparing and appropriate diet, the ulceration in the mean time extending, and sloughing being imminent, so tightly did the sphincter constrict it after protrusion.

I then devised the following mechanism to hold the rectum in place until the relaxed integuments could gain their accustomed tonicity, and at the same time to prevent any possible protrusion, the further occurrence of which would have undoubtedly hazarded the safety of the patient.

Not being near enough to an instrument maker to procure better materials, I took a piece of wire the size of a small bougie and about ten inches in length, bent a hook of two or three inches in length on one end, and fashioned it so as to fit the curve of the sacrum, the external portion fitting closely in the sulcus of the nates and reaching up to a level with the top of the sacrum. The end of the hook was covered with a pad about the size of the thumb and an inch in length. On the upper end of the wire was bent a smaller hook, through which bandages might be passed over the shoulders and around the abdomen to hold it in place.

The rectum was now returned, and the padded end of the hook, well smeared with an astringent ointment, was passed into the rectum, and the other end brought up between the nates and secured by bandages. The curve in the hook was such that the pad lying against the posterior wall of the rectum held it in its normal position against the curve of the sacrum. This contrivance was found not to interfere in the least with defecation or with the child's locomotion.

The previous treatment was kept up and the wire taken off and cleansed after each evacuation. It was worn in this manner for two weeks, then every other day for a week, and finally dropped altogether. There has been no recurrence of prolapsion up to the present time, and the child is now in good condition.

Case of Tapeworm probably contracted by Eating Beef or Veal. By J. H. BEECH, M. D., of Coldwater, Mich.

The following case has a tendency to support the opinion expressed by

Dr. Cobbold before the British Association "that tapeworm is often contracted from eating beef and veal."

A young man, aged 25, single, possessing more than ordinary intelligence, applied to me a few days since on account of indigestion, stating that he had, between 1860 and 1865, discharged several pieces of tapeworm, estimated to amount to full one hundred feet; that parts of it were in the hands of two different physicians, and that he had at home about 25 feet (and he believed the head) which was discharged after he had subsisted for several days principally upon pumpkin seeds, and then taken a large dose of turpentine.

In reference to the commonly received opinion that tapeworm was produced by eating measly pork, he stated that he had not been in the habit of eating much pork; had never eaten it raw except when well cured as bacon or salted for a long time; but that his occupation was formerly that of a butcher and salesman in a meat market, and that he was fond of and frequently ate raw beef and veal; also, that after he became certain that he was afflicted with tapeworm, he subsisted on very rare beef and Graham bread for a long time. More recently he had been boarding among comparative strangers, and had used more thoroughly cooked meat and a greater variety of food. He further stated that many of his former symptoms of the parasite were at present wanting, and it was my opinion that it was not now the cause of his complaint. He is plethoric at present, and fond of company, and doubtless abuses a stomach rendered more sensitive by what it has suffered.

Poisoning by Eating the Fruit of the Rhus Toxicodendron. By J. W. MOORMAN, of Hardinsburg, Ky.

The poisonous effects of the Rhus Toxicodendron are well known (see *Griffith's Medical Botany*, p. 184; *U. S. Dispensatory*, 12th ed., p. 836, &c.). Nevertheless but few cases we believe have been recorded of poisoning resulting from eating the fruit of the plant, and it therefore may be well to record two cases of this kind communicated to me by a professional friend.

The subjects of these cases were children, one six and the other eight years of age. The quantity eaten was nearly a pint. In a few hours the children became drowsy and stupid, and in a short time vomiting commenced, first of the partially digested fruit, afterwards of a thick, tenacious fluid of a wine color. Then convulsions of different parts of the body followed, accompanied by slight delirium. Respiration was hurried, pulse at first full and strong, but slow, afterwards small, frequent, and compressible; pupils dilated. Warm water was given to promote emesis and thus clear the stomach of the poisonous matter; afterwards large quantities of carbonate of soda in solution, under the belief that it was an antidote to the poison. Otherwise they were treated on general principles. Both cases recovered, though the youngest convalesced very slowly.

Spontaneous Umbilical Hemorrhage. By J. H. POOLEY, M. D., of Yonkers, N. Y.—

I WAS called, December 17, 1864, to see a girl, thirteen days old, who was bleeding from the navel. The funis had separated five days before in a perfectly natural way, and left an umbilicus quite healthy in appearance. The child, for several days after birth, was very much jaundiced, and its urine highly charged with bile elements; in every other respect it was

quite healthy. The mother was attended in her confinement by a *wise-woman* of the neighbourhood, but I could not learn that any unusual circumstance had attended the birth.

The bleeding began the day before I saw the child, was very slight at first, had been gradually increasing, but, at the time of my first visit, it amounted to no more than a moderate and persistent oozing. I prescribed five drops of the muriated tincture of iron every two hours, and filled the umbilical depression with pulverized alum, applying over it a graduated compress and bandage. This failed, except for about an hour, to arrest the bleeding. In the evening, the hemorrhage increasing, with the concurrence and assistance of my friend, Dr. Upham, who had been called in consultation, I applied the ligature, *en masse*, by passing two stout steel pins at nearly right angles to each other through the integument and under the navel, and twisting a wax-end silk thread tightly over them in a figure of 8. This appeared to check the bleeding for a couple of hours, but it again recurred and continued through the night.

The next day, the 18th, Dr. Upham saw the child and applied the per-chloride of iron without any good effect. I saw my little patient about twelve o'clock; it was then very pale and languid, evidently failing. Saw it again at 5 P. M.; bleeding continued; child sinking rapidly; applied pulverized matico. Died at midnight. No post-mortem was allowed. The mother of this child had given birth to five others, all of whom had died in early infancy, and most of them, it was said, from some form of marasmus; they were all deeply jaundiced soon after birth.

DOMESTIC SUMMARY.

Aphasia.—The attention of clinical observers, Prof. Austin Flint observes (*Medical Record*, March 1, 1866), has recently been directed to a loss of power of speech occurring without inability to perform the movements involved in the utterance of language, and without any lesions of the organs of phonation, for which affection M. Trousseau has proposed the name *aphasia*. "All observers," the Professor remarks, "agree that the affection, in the great majority of cases, is associated with hemiplegic paralysis, and that the paralysis, as a rule, is on the right side of the body; hence, it has been inferred that the faculty of speech is seated in the left hemisphere of the brain. A French observer, Dr. Dax, appears to have collected the largest number of cases, viz., 140, in which the paralysis was on the right side.[1] It is intimated, however, that some of these cases were not cases of veritable aphasia. Dr. J. Hughlings Jackson, of London, has reported 34 cases, of which in all but three the right side was paralyzed.[2] In a large proportion of these cases cardiac murmur coexisted, a fact which the reporter considers as tending to show the probable production of the paralysis by embolism. According to Trousseau, in the immense majority of cases there exists softening of the brain. The affection, however, is not invariably associated with hemiplegia—that is, it may be independent of paralysis; and that it may exist without softening or other structural lesions is rendered probable, not only by the fact just stated, but by the complete recovery from the paralysis in some of the cases in which the latter coexists."

Prof. Flint gives an account of six cases of this affection which have fallen under his observation at Bellevue Hospital. In four of these cases the hemi-

[1] Archives de Médecine, Jan. 1865, and London Lancet, Aug. 1865.

[2] Clinical Lectures and Reports, London, 1861; and Archives de Médecine, March and April, 1865.

plegia affected the right side; in the remaining two he is unable to say which side was hemiplegic. He does not believe, however, that the mental faculty of speech is *localized* in the left hemisphere of the brain. "Irrespective," he says, "of the improbability of the faculty being seated in either hemisphere to the exclusion of the other, this question is to be answered negatively in view of the fact that aphasia does occur in cases of hemiplegia affecting the left side, although the number of such cases is comparatively few. Were the faculty of speech seated exclusively in the left hemisphere, there should be no exceptions to the rule of the hemiplegia being on the right side. The situation of the hemiplegia on the right side, in the great majority of the cases of aphasia, is, however, a striking fact, which, of course, has an adequate explanation. Autopsical researches may show that the loss of speech depends on a particular situation, in either hemisphere, of the morbid conditions giving rise to the paralysis; and that, for reasons at present unknown, this situation is more likely to be involved when the conditions are seated in the left than in the right hemisphere. In the only one of the six cases in which an autopsy was made, there was circumscribed softening of the anterior lobe of the left hemisphere, the softening extending to the superficies. So far as this case goes, it sustains the statement of Trousseau, that in aphasia there generally exists softening.

"In all these cases the aphasia persisted without any improvement. So far as these cases go, they do not afford encouragement to expect the return of the power of speech, even when recovery from the hemiplegia is nearly complete. Recovery from aphasia does, however, sometimes take place. I have met with an instance of incomplete aphasia, in private practice, associated with transient hemiplegia, in which, after a few days, the memory of words returned. A case of recovery from complete aphasia, with hemiplegia, is reported in the *Buffalo Medical and Surgical Journal* for November, 1865, by Dr. Conger. Trousseau and others have reported cases of recovery.[1]

"In cases of persistent aphasia it is not easy to determine to what extent the mental faculties are preserved, aside from the memory of words. The ability to comprehend freely what is said, and sufficient intelligence to perform routine duties, are certainly not incompatible with the loss of speech; but it is extremely difficult to ascertain the mental condition as regards the reasoning powers, judgment, and sentiments. Trousseau is of opinion that the intelligence is always impaired to a greater or less extent. With reference to this point of inquiry, further study of the affection is desirable. The affection, in this aspect, has an obvious and important medico-legal bearing."

Gutta-Percha Shoe in the Treatment of Talipes.—Dr. ALFRED C. POST extols (*Medical Record*, March 1, 1866) the gutta-percha shoe in the treatment of talipes as preferable to the spring ordinarily employed. The material which he ordinarily uses in the construction of these shoes, he says, "is a gutta-percha sheet from a sixteenth to an eighth of an inch in thickness. It is cut of such a shape as to adapt itself to the sole and sides of the foot, leaving a space uncovered on the dorsum of the foot equal to about one-third of the breadth of the foot; it is also adapted to the sides of the leg, extending up two-thirds of the distance to the knee, and leaving a narrow space uncovered before and behind, each space so uncovered being about one-sixth of the circumference of the leg. The material is readily moulded to the shape of the limb by immersing it for a few seconds in water at a temperature of 100° Fahrenheit. I am in the habit of moulding the shoes, thus heated, over a wooden last made for the purpose. The last is not made after the fashion of a bootmaker's last, but it is shaped like the natural leg and foot, except that the outer side of the foot is made to correspond with the inner, thus obviating the necessity of having separate lasts for the right and left foot."

He generally commences the treatment of infantile club-foot "by the subcutaneous division of the tendo-Achillis, after which I apply a strip of isinglass

---

[1 An extremely interesting and instructive case of aphasia, in which recovery took place, is recorded by Professor S. Jackson in the No. of this Journal for Feb. 1829, p. 272.—ED. AM. JOUR.]

plaster over the small wound of the skin. I then have the foot held by an assistant as nearly as possible in its normal position, and while it is so held I carefully apply a roller bandage so as to cover the foot and leg, beginning the application on the outer side of the ankle. I then apply the gutta-percha shoe, an assistant grasping the leg with one hand, pressing the upper part of the shoe against the sides of the limb, and with the other hand pressing the sole of the shoe against the sole of the foot. While the shoe is thus firmly pressed against the leg and foot, I apply a roller bandage firmly, so as to secure it in its place. After the lapse of twenty-four to forty-eight hours, I take off the bandages and shoe, wash the foot, wipe it dry, use passive motion freely in different directions, and then reapply the apparatus as before. The application is repeated at intervals of two or three days, until the foot is brought to its proper shape, when it is put up in a laced boot, lacing to the toes, and having a firm sole and stiff sides, provided with iron braces which extend nearly as high as the knee, and secured by a strap and buckle around the upper part of the leg.

"The following are, in my estimation, the advantages of the gutta-percha shoe over Scarpa's shoe and its various modifications:—

"1. Its greater simplicity, and the ease with which it is made. When the material is at hand, the shoe can readily be made in fifteen minutes.

"2. It is much cheaper than the spring shoe.

"3. It is more comfortable to the patient, being lighter, exerting a less injurious pressure, and being less likely to be kicked off by a restless child.

"4. It is much less likely to occasion excoriation or ulceration of the integuments.

"5. It expedites the cure, giving a better support to the foot, and bringing it more readily into its normal position."

—

Amputation at the Hip-Joint.—Dr. A. M. Fauntleroy, of Staunton, Va., reports (*Richmond Medical Journal*, Jan. 1866) a case in which he performed this operation with success. The subject of it was a soldier, 37 years of age, of previous good health, admitted into the General Hospital at Staunton, Va., 19 December, 1864, who had had his right thigh amputated at the lower third October 17th, 1864, for a gunshot wound of the knee-joint. By the 1st January, 1865, the stump had almost cicatrized, except two small apertures from which there was a discharge, during the 24 hours, of four or five ounces of fetid pus.

This discharge subsequently increased in quantity, and an exploration with a probe revealed the bone to be denuded of periosteum and much roughened. Dr. F. therefore decided to open the face of the stump, and remove the diseased bone, which he proceeded to do March 11th, 1865. The patient having been given some whiskey, and then chloroform by inhalation, the face of the stump was opened and the bone found so much diseased that "it was determined to proceed with the exploration, until sound bone was reached. With this view, an incision was made on the outer aspect of the thigh, between the vastus externus muscle and the biceps femoris; this incision was ultimately extended over the trochanter major, on a line with the superior spinous process of the ilium—the disease extended to the head of the bone, requiring its entire removal.

"The glenoid cavity was found healthy. In the operation, digital compression was made, over the pubic bone, upon the femoral vessel; the arteries were tied, as they were cut; the superficial and deep femoral vessels were secured by ligation; the flaps were then made, leaving them somewhat longer than is usual in hip-joint amputations. The patient's loss in arterial blood was trifling in amount; the flaps were secured by silver wire sutures, and the stump was dry-dressed.

"As soon as the patient was restored to consciousness, half an ounce of whiskey was administered every fifteen minutes until reaction became manifest, and warm bricks were applied to the body and extremity. The patient rallied completely in a few hours, and drank during the day nearly a pint of cream, and ate two soft-boiled eggs. The whiskey was exhibited every half hour during the evening, and every hour during the night. At bedtime his pulse numbered a hundred and twenty beats. (He stated that normally his pulse is very frequent and quick.)"

Under judicious treatment, consisting mainly of nourishment, stimulants, tonics, and sedatives, the patient gradually recovered, and on the 18th July was discharged in excellent health, and walking upon crutches.

—

Colotomy for Relief of Cancer of the Rectum.—Prof. GEO. C. BLACKMAN relates (*Cincinnati Journal of Medicine*, Jan. 1866) an interesting case of cancer of the rectum in a coloured man aged 35, in which he performed Amussat's operation. The patient had not had an evacuation from his bowels for ten days, was unwilling to eat, and was rapidly becoming emaciated, when on the 15th of Oct. Prof. B. "exposed, according to the usual method, the left descending colon in the lumbar region, and, having secured it by means of a ligature, I made an incision into the bowel of about one and a half inches. The intestine was then fastened to the lips of the wound by several interrupted sutures. On incising the colon, neither feces nor flatus escaped, but, with the point of my finger, I could easily reach the solid contents of the bowel. I made no attempt to bring on a discharge, but removed him to his bed, and directed him to keep quiet. The stitches were not removed until the ninth or tenth day. About this period a dose of castor oil was administered, and fecal matter passed freely both by the artificial anus and the rectum. From that until the present time—December 26—the fecal matter has passed altogether through the artificial opening. The patient has indulged freely in the use of solid food, and has gained rapidly in flesh and strength. During the past ten weeks he has had two attacks of hemorrhage from the fungous mass within the rectum. One of these was severe, and required injections of persulphate of iron to arrest it. With the exception of these temporary drawbacks, his improvement has been most gratifying, not only to himself, but to all who have witnessed the progress of the case. Since the operation he has occasionally, from imprudence in eating, been troubled, for a day or two, with diarrhœa and incontinence; but, as a general rule, the artificial anus has given him no trouble on this account. He states that, when his bowels are in a natural condition, fecal matter passes readily; then, as in a healthy condition of the rectum and anus, the opening seems to close. There is at the present time a plug of mucous membrane, which gently protrudes, and which probably aids, to a certain extent, in the retention of the feces. The patient suffers no more from the excruciating tortures which rendered him, before the operation, so miserable, and which threatened soon to terminate his existence, and has no hesitation in declaring that, even if his life should not be prolonged another day, he has been amply repaid for submitting to the operation. He has taken one grain of opium every night since the operation, and is now taking of the bromide of iron three grains three times in the day, with occasional injections of the persulphas ferri to the diseased rectum. By these means we hope to hold in check the progress of the cancer.

—

Gunshot Wound of the Brain; the Ball traversing both Hemispheres; Death from Scarlatina six months afterwards.—Dr. JOHN HUTCHINSON presented to the Medical Society of County of Kings an interesting case of this.

The subject of it was a girl seven years old injured by a *buck-shot penetrating the cranial cavity.* The child *walked* to the office and back home. A *probe passed* into the track of the ball *four inches. No brain symptoms appeared* except slight vomiting, which lasted but two or three days. *Entire recovery* took place, the child going to school and playing as other children. Subsequent death six months afterwards from another cause and a post-mortem examination revealing that there had *been no disease of the brain;* that the *ball* had *traversed* the posterior lobes of both hemispheres of the cerebrum, and rebounding had lodged in the brain substance, where it had remained with impunity, causing no inconvenience, and had become almost "a forgotten thing."—*Buffalo Med. and Surg. Journ.*, Jan. 1866.

—

Dislocation of the Patella on its Axis.—Dr. Hamilton, in his excellent work on fractures and dislocations, states that not more than fifteen examples have been recorded of this accident. A very interesting one was detailed in the

number of this journal for April, 1843, by Dr. Gazzam, of Pittsburg; and another occurred in the practice of our friend the late Dr. Jno. Watson, of New York (*New York Journ. of Med.*, Oct. 1839).

The following recent case was reported to the Buffalo Medical Association by Dr. ROCHESTER (*Buffalo Med. and Surg. Journ.*, Dec. 1865): "On the evening of 28th August, a large and growing lad, of sixteen years, fell, striking his knee on the curbstone. On seeing him, a few minutes after the accident, the right patella was found completely dislocated outward, and *turned upon its edge*, standing at right angles with its normal position. The knee was slightly swollen, and very tender and painful to the touch. Chloroform was given to complete anæsthesia, and two or three unavailing efforts were made to replace the bone, the limb being fully extended, and the foot elevated. Dr. Gay, who was also present, then, by a different procedure, at once reduced the dislocation; he flexed the leg upon the thigh, and the thigh upon the body, and then extended, and at the same time rotated the limb, pressing, meantime, firmly upon the patella, which immediately slipped into its place, while the limb was passing from flexion to extension."

—

Dislocation of the Thigh upon the Dorsum Ilii.—Dr. A. M. FAUNTLEROY records ("*Confederate States Journal*") an interesting case of this reduced by manipulation twenty-five days after the accident. The subject of it was a soldier, 25 years of age, admitted into the hospital at Staunton October 12, 1864. While riding on an ordnance wagon September 22, it had been upset, and the patient was thrown upon his face, a portion of the ammunition falling on his hip and thigh.

On examination there was observed "loss of rotundity of left buttock; left femur was slightly flexed, and rotated with adduction; the knee resting upon the patella of the right thigh and the ball of the big toe upon the dorsum of right foot. Great pain was experienced upon an attempt to extend the thigh, and considerable manual traction made without chloroform failed to dislodge the head of the bone from its abnormal position. Manipulation was decided upon, and, with the aid of chloroform, was successfully employed. The patient was placed upon the table, upon his right side, the leg of the injured side being flexed upon the thigh, and the latter flexed strongly upon the body, with slight abduction. The adhesions which the head of the bone had contracted were broken up at the first attempt, and the bone assumed a new position in the great ischiatic notch, somewhat sustaining the views of Boyer, that this latter dislocation is always consecutive in occurrence.

"The head of the bone was felt in its new position, shortening slightly lessened, and foot not quite so much inverted. A second essay was made, the manipulation differing from that used in the first instance by the traction made upon the femur at the moment of its flexion upon the body, and its abduction, by which means the head of the bone was lifted over the edge of the acetabulum, and returned into the cotyloid cavity without snap, and the limb was extended and found to be normal in position and length.

"He was retained in bed for a few days, and ordered to apply liniment. ammoniæ over the gluteii muscles. The soldier was furloughed on the 27th of October for thirty days, still complaining of considerable soreness of the hip."

—

Constituents of Veratrum Viride.—Mr. CHARLES BULLOCK (*Amer. Journ. Pharm.*, March, 1866) publishes some interesting investigations made by him relative to the alkaloids in the veratrum viride. The following is a summary of his conclusions:—

1. That veratrum viride contains two alkaloids, one soluble in ether and the other insoluble in that menstruum. Neither of these principles answers in its chemical reactions to veratria.

2. That the resinous matter which precipitates when the concentrated tincture of the root is poured into acidulated water carries down with it a notable portion of the alkaloid insoluble in ether.

3. That the alkaloid insoluble in ether, when administered in small doses, has a

very perceptible sedative effect on the circulation without producing any other disturbance.

4. That the pure resin produces sedative effects nearly or quite equal to those obtained from the alkaloid.

The late Professor Chandler R. Gilman.—At a meeting of the Trustees of the College of Physicians and Surgeons, of the city of New York, held on the 10th inst., the death of Chandler R. Gilman, M. D., Professor of Obstetrics and the Diseases of Women and Children, having been announced, it was

Resolved, That the Trustees of this College have heard with deep regret of the decease of one of the most eminent of its Professors.

Resolved, That during the long period during which the late Dr. Gilman has taught in this College, the talent, earnestness, and zeal with which he has devoted himself to the instruction of its pupils has always secured him their entire respect and admiration, and the uniform, urbane, and considerate manner of his association with his class has equally entitled him to their affection and goodwill.

Resolved, That these resolutions be published in the daily papers, and a copy transmitted to the family of the deceased.

EDWARD DELAFIELD, M. D., *President.*

GURDON BUCK, M. D., *Registrar.*

At a meeting of the President and Faculty of the College of Physicians and Surgeons, held October 16, 1865, the following preamble and resolutions were unanimously adopted:—

Whereas, It has pleased Almighty God to remove from this world our friend and colleague Professor Chandler R. Gilman, while humbly bowing to this dispensation of an all-wise Providence, we, who have shared his toils and witnessed his devotion to the exalted duties of a self-sacrificing profession, may be permitted to give some public expression to the feelings that so sad an event cannot fail to excite; therefore,

Resolved, That in the death of Dr. Gilman this institution has lost an able, successful, and distinguished teacher; its officers an intimate, tried, and endeared personal friend; the medical profession a wise and trusted counsellor; and the community a learned and deservedly eminent physician, a profound thinker, and a great and good man.

Resolved, That while, from the chair which for twenty-five years he has adorned, he has eloquently taught the true principles of medical science, and has distinguished himself as a leader in scientific progress, he has no less, in blameless life, honourable character, genial sympathies, reverence for truth, respect for the rights of others, in his graceful literary attainments, in his faithfulness and zeal in all professional duties, and in his jealous watchfulness over professional purity and honour, left an example worthy the imitation of the thousands who have listened to his teachings, and cherish his principles.

Resolved, That to his bereaved family we tender our heartfelt sympathy, invoking for them Heaven's choicest consolations, and assuring them that we shall ever cherish in our hearts pleasant memories of his life and labours.

J. C. DALTON, M. D.,
Secretary of the Faculty.

INDEX.

A.

Abscess of spleen, 424
Adams on curvature of spine, review of, 197
Air, decomposition of by tissues, 511
Air-passages, foreign bodies in, 540
Allin, peculiar hæmatocele, 145
American hospitals for insane, reports of, 213, 480
Amputation at hip-joint, 563
——— shoulder-joint, 143
Amyl compounds, physiological action of, 240
Anæmia, inhalation of oxygen in, 249
Anæsthesia, 194
———, new means of producing, 512
Anæsthetic, bichloride of carbon as, 513
——— mixture, new one, 240
Ankle-joint, new method of excision of, 84
Animal heat, production of, 511
——— parasite diseases of skin, 246
Anstie, Stimulants and Narcotics, review of, 438
Aphasia, 561
Aphthæ in adults, 244
Arnold, opium in shock, reaction, &c., 212
Arterio-venous cyst in popliteal nerve, 538
Artificial membrana tympani, 106
Ashhurst, lithotomy, 420
———, mammary cancer, 153
Ashton on rectum, notice of, 510
Astragalus, compound dislocation of, 260
Atropia in treatment of constipation, 526
——— points, 552

B.

Baker, deodorization and disinfection, 556
Balbiani, functions of nucleus, 511
Bartholow, bromide of potassium, 282
Beach, tapeworm, 559
Beale, entozoa in muscles of animals killed by cattle plague, 530
———, on life, 237
Beef as a source of entozoa, 278
Bell, physiology of mydriasis, 549
Bennett, cell-pathology, 239
Bernard, medical statistics, 517
Bertholet, production of animal heat, 511
Bibliographical notices—
——— Annual Report of Surgeon-General U. S. A., 508
——— Ashton on Rectum, 510
——— Biddle's Materia Medica, 221
——— Brinton on Diseases of Stomach, 234
Bibliographical notices—
——— Bumstead on Venereal Diseases, Italian Translation of, 236
——— Byford, Diseases and Accidents of Women, 219
——— Garrod's Essentials of Materia Medica, 232
——— Guy's Hospital Reports, 489
——— Hammond on Watchfulness, &c., 507
——— Higginbottom, Nitrate of Silver, 502
——— Nott, Bone and Nerve Surgery, 506
——— Palmer, Ford, and Earl, Epidemic at Maplewood Ladies' Institute, 235
——— Pettigrew on Muscular Fibres in Ventricles of Heart, and on Structures and Functions of Valves, 497
——— Radcliffe's Lectures on Epilepsy, &c., 230
——— Reports of American Hospitals for the Insane, 213, 480
——— Richardson, Restoration of Life after its Manifestations have ceased, 225
——— Stiles on Direct Influence of Agents on Muscular Tissue of Bloodvessels, 223
——— Syme's Principles of Surgery, 230
——— Tanner's Practice of Medicine, 229
——— Transactions of American State Medical Societies, 473
——— Transactions of the Medical Society of the State of Pennsylvania, 207
——— West on Diseases of Children, 510
——— Wilson on Cutaneous Medicines, 509
——— Winslow, Obscure Diseases of Brain, 224
Biddle, materia medica, notice of, 221
Black, ether as a local application, 356
Blackman, colotomy for cancer of rectum, 564
Blood diseases, 479
Bone, regeneration of, 163
Bouchut, diagnosis by means of the ophthalmoscope, 531
Brain, gunshot wound of, recovery, 564
Bright's disease, curability of, 529
Brinton, on diseases of stomach, notice of, 234
Bromide of potassium, action of, 283
Bronchial irritation, symptomatic, 94
Bronzing of the skin for seven years, 250
Brown, chloride of iron in skin diseases, 389
———, new anæsthetic mixture, 240
Bruce, influence of chlorate of potash on fœtus, 553

Bryant, vesico and recto-vaginal fistula, 493
Buller, hot mustard bath in cholera, &c., 525
Bullock, alkaloids of veratrum viride, 565
Burr, cerebro-spinal meningitis, 475
Byford, Diseases and Accidents of Women, notice of, 219

C.

Cancer, epithelial of cheek, 477
——— of ascending colon, 160
——— of rectum, colotomy, 564
——— of testis, 536
Canquoin's caustic paste, modification of, 240
Carbuncle, subcutaneous section of, 258
Cataract, black, 271
Cattle plague, entozoa in muscles of animals killed by, 530
Cell-pathology, 239
Cerebro-spinal meningitis, 475
Children, paralysis in, 283
———'s diseases, 243
Chlorate of potash, influence of, on life of fœtus, 553
Chloride of iron in skin diseases, 389
——— of zinc, surgical observations on, 532
Chloroform and ergot in obstetric practice, 361
Cholera, death from, 557
———, hot mustard bath in, 525
———. Snow's theory of the causes of, 521
Cobbold, beef and pork as sources of entozoa, 278
———, entozoal-like bodies found in muscles, 530
Colotomy for cancer of rectum, 564
Congelation of animals, 238
Conjunctiva, dermoid tumour of, 281
Constipation, atropia in treatment of, 526
Corse, report on meteorology and epidemics of 1864, 156
Coryza, instantaneous cure of, 250
Cotton, hæmoptysis unassociated with tuberculosis, 521
Cutter, excision of humerus and heads of ulnar and radius, 139
———, ——— of six inches of tibia, 142

D.

Da Costa, typhus fever, 17
Dale, sycosis menti, 281
Davaine, malignant pustule, 246
Davy, application of ozone to sanitary purposes, 555
———, effects of scanty food, 277
——— animal food, 277
Deglutition as observed by the laryngoscope, 238
Demarquay, decomposition of air by tissues, 511
De Morgan, chloride of zinc in surgical operations, 532
Deodorization and disinfection, 556
Depaul, retention of urine in fœtus, 276
Dermoid tumour of the conjunctiva, 281
Diarrhœa, hot mustard hip-bath in, 525
Diploteratology, 478
Diphtheria, hyposulphite of soda in, 524
——— in Pennsylvania, 211
———, lemon-juice in, 524
Dislocation, compound, of astragalus, 260
——— of patella on its axis, 564
——— of thigh, 565
Dixmont Hospital for Insane, notice of report of, 486
Dodenil, subcutaneous injections of quinia in rheumatism, 525
Downs, antidotal powers of opium and belladonna, 477
Duncan, mortality of childbed as affected by number of labour, 271
Dunn, treatment of hereditary syphilis without mercury, 253
Dyer, rupture of uterus, abdominal section, recovery, 274

E.

Eastman, modus operandi of quinia, 475
Ellis, polypi of vocal cords, 422
Elsburg, nebulization, 477
Emmet, reduction of inverted uterus, 149, 403
Entozoa, beef and pork as sources of, 278
——— in muscles of animals destroyed by cattle plague, 530
Ergot and chloroform in obstetric practice, 361
Erysipelas in Pennsylvania, 211
Estor and St. Pierre, experiments to determine when spleen is most actively performing its functions, 537
Ether as a local application, 356
Excision of humerus and heads of ulna and radius, 139
——— of joints, 545
——— of six inches of tibia, 142
Exsection of part of tibia, 279
Extra-uterine fœtation, 275
Eulenberg on Hypodermic Injections, review of, 427
Eve, cases of lithotomy, 384

F.

Fauntleroy, amputation at hip joint, 563
———, dislocation of thigh on dorsum ilii, 565
Fayrer, osteo-myelitis, 251
———, successful treatment of traumatic tetanus, 255
Fecal matter, utilization of, 557
Fever, periodic in Pennsylvania, 207
———, scarlet, in Pennsylvania, 210
———, spotted, 209
———, typhus, 17
———, causes of intermittent and remittent, 51
Fisher, diploteratology, 478
Fleming, atropia in constipation, 526
Flies, influence of galvanism on heart, 238
Flint, aphasia, 561
Fœtus, influence of chlorate of potash on life of, 553
———, signs of life in, delivered at five months, 558
Food, effects of scanty, 277
Foreign bodies in air-passages of children, 540
Foster, glycogen in tissues of entozoa, 512
Fracture of external table of skull by ball striking inside of cranium, 261
——— of larynx, 261

Fractures of base of skull, 412
——— of larynx, 378
——— of skull, 413
Freed people, diseases among, 364
Friends' Asylum Report, notice of, 218

G.

Galvanism, its influence on heart, 238
Garrod, essentials of materia medica, 232
Gay, phlegmonoid erysipelas, 474
Gibbs, yellow fever at Pensacola, 340
Gillespie, death from chloroform, 557
Gilman, in memoriam, 566
Gilewski, polypi of larynx, 543
Glycogen, in tissues of entozoa, 512
Gordon, puerperal tetanus, 102
———, trephining spine, 546
Grant, compound dislocation of astragalus, 260
Graves' disease, 268
Gross, torpedo wounds, 369
Guepin and Wecker, sympathetic ophthalmia, 264
Guersant, cancer of testis in children, 536
———, foreign bodies in air-passages of children, 540
———, lemon-juice in diphtheria, 524
Guinier, deglutition, 238
Gunshot wound of brain, 564
——— ——— in neck, ball in spinal cord, 414
Gutta-percha shoe in treatment of talipes, 562
Guy's Hospital Report, notice of, 489

H.

Hæmatocele, peculiar, 145
Hall, puerperal convulsions, 479
Hammond on wakefulness, notice of, 507
———, treatment of paralysis in children, 283
Hassall, curability of Bright's disease, 529
Harding, degeneration of vaccine lymph by frequent transmission, 248
Hart, retinal disease from kidney disease, 266
Heart, muscular fibres and valves of, 497
Heath, subcutaneous section of carbuncle, 258
Hedersleben, trichinosis at, 531
Hemorrhage, accidental, 272
Hereditary syphilis, treatment of without mercury, 253
Heyerdahl, wire-ribbon in cases of turning, 552
Hicks, extra-uterine fœtation, 275
Higginbottom, nitrate of silver, notice of, 502
Hildreth, chloroform and ergot in obstetric practice, 361
———, shoulder presentation, 395
Hip-joint, amputation at, 563
Holden, causes of disease on ships of war, 75
Holloway, comparative advantages of Pirogoff's, Syme's, and Chopart's amputations, and excision of ankle-joint, after wounds, &c., 84
Hospital gangrene, 351
Hot mustard hip bath in cholera, &c., 525
Hoyt, bifid uterus, 286
Hulke, retinal disease from kidney disease, 265
Hunt, fractures of larynx and ruptures of trachea, 378
———, regeneration of bone, 163
———, tumour on posterior part of tongue, 163
Hutchinson, epithelial cancer of cheek, 477
———, gunshot wound of brain, 564
———, retinal disease from kidney disease, 267
Hydatids of liver, 242
Hypodermic injections in treatment of disease, 427
——— of quinia in rheumatism, 525
Hyposulphite of soda in diphtheria, 524
——— intermittent fever, 388

I.

Illinois State Hospital for Insane, notice of Report of, 213
Indiana State Hospital for Insane, notice of Report of, 213
Inhalation of oxygen in phthisis and anæmia, 249
Insanity, climacteric, 251
Intermittent fever, hypersulphite of lime in, 388
Intra-uterine variola, 275
Iodine, non-officinal compounds of, 476
——— vapour, a cure for coryza, 250
Iron-clad fever, 80
———, physiological action of, 515

J.

Johnson, strumous ophthalmia with reflex contraction of the orbicularis palpebrarum, 263
Joints, wounds of, 544
———, excision of, 545

K.

Kempster, exsection of part of tibia, 279
———, hospital gangrene, 351
Kentucky Eastern Asylum Report, notice of, 215
Kratz, trichinosis, 531

L.

Labour, neuralgic and paralytic affections after, 372
Larynx, fracture of, 261, 378
———, polypi of, 543
Laurence, atropia points, 552
Leanness, does animal diet conduce to, 277
Leavitt, hypersulphite of soda in intermittent fever, 388
Lecadres, utilization of fecal matter, 557
Legros, intra-uterine variola, 275
Lemon-juice in diphtheria, 524
Lewin, laryngoscope, review of, 464
Life, Beale on, 237
Lithotomy, 384, 420
Longview Asylum Report, notice of, 216
Lorent, hypodermic injections, 424
Luc, rapid cure for coryza, 250

M.

Mackenzie on Laryngoscope, notice of, 464
Maclean, fracture of larynx, 261
Maine Insane Hospital Report, notice of, 480
Malignant pustule, 146
Mammary cancer, 153
Maplewood Ladies' Institution, epidemic at, notice of, 235
Martin, solanum paniculatum, 515
Maynard, hyposulphite of soda in diphtheria, 524
Median nerve, paralysis of, 280
Medullary cancer, 418
Meningitis, suppurative, 423
Membrana tympani, artificial, 106
Merrill, symptomatic bronchial irritation, 94
Meteorology and epidemics of 1864, report on, 156
Metz, report on ophthalmology, 478
Moon, amputation of shoulder-joint, 143
Moore, arterio-venous cyst in popliteal nerve, 538
———, signs of life in a five months' fœtus, 558
Moorman, paralysis of median nerve, 280
———, poisoning by fruit of Rhus toxicodendron, 560
Mortality in childbed as affected by the number of the labour, 271
Murchison, hydatids of liver, 242
Mydriasis, 549
Myopia, changes in fundus of eye in progressive, 549

N.

Nassbaum, dangers of subcutaneous injections, 240
Neuralgic and paralytic affections after, 372
New York, Transactions of the State Medical Society of, 473
———, census of, 474
———, smallpox in, 477
Northampton Lunatic Hospital, notice of Report, 484
Nott, Bone and Nerve Surgery, notice of, 506
Noyes, ophthalmoscope, 477
Nucleus, functions of, 511
Nunneley, black cataract, 271
———, removal of entire tongue, 259

O.

Ohio Central Lunatic Asylum Report, notice of, 217
——, notice of Transactions of State Medical Society of, 478
—— Southern Lunatic Asylum Report, notice of, 217
Ophthalmia, strumous, 263
———, sympathetic, 264
Ophthalmoscope, 477
———, diagnosis with, 531
Opium in shock, reaction, &c., 212
Osteo-myelitis, 251
Ovariotomy, 397, 548
Oxygen, inhalation of in phthisis and anæmia, 249
Ozone, 276
——, application to sanitary purposes, 555, 556

P.

Packard, anæsthesia, 154
———, spina bifida, 411
Paget, removal of entire tongue, 538
——, subcutaneous ulceration, 535
Patella, congenital luxation of, 259
———, dislocation of, on its axis, 564
Peach, prolapsus recti, 559
Peale, medullary cancer, 418
Pennsylvania State Hospital for Insane, notice of Report of, 485
———, Transactions of Medical Society of, 207
Pensacola, yellow fever at, 340
Pepper, abscess of spleen, 424
———, fracture of bone of skull, 412
———, gunshot wound of spinal cord, 414
———, infiltrated tubercle, 406
———, remittent fever, 405, 408
———, report on tumour, 419
———, suppurative meningitis, 423
Periodic fevers in Pennsylvania, 207
Peritonitis, fatal, in typhoid fever, 167
Pettigrew, muscular fibres of heart and structure of valves, 497
Phenic acid in phthisis, 250
Phlegmonoid erysipelas, 474
Phthisis, inhalation of oxygen in, 249
———, phenic acid in, 250
Placenta prævia, 476
Pneumonia, morbid anatomy, &c. of, 518
———, pathology of, 475
Polymorphism of disease, 515
Polypi of larynx, 543
—— of vocal cords, 429
Pooley, umbilical hemorrhage, 560
Popliteal nerve, arterio-venous cyst in, 538
Porter, neuralgic and paralytic affection after labour, 372
Post, gutta-percha shoe in treatment of talipes, 562
Pouchet, congelation of animals, 238
Prince, surgical instruments, 147
Procidentia uteri, 554
Prolapsus recti, 559
Puerperal convulsions, 479
———— tetanus, 102
Pupil, physiology of dilated, 549

Q.

Quinia, modus operandi of, 475

R.

Radcliffe, lectures on epilepsy, &c., notice of, 236
Ramsay, vaccination, 476
Rectum, cancer of, 564
Reeves, ovariotomy, 397
Reith, Graves' disease, 268
Retinal disease in kidney disease, 265
Reviews—
——— Adams on Curvature of Spine, 197
——— Anstie on Stimulants and Narcotics, 438
——— Hypodermic Injections in the Treatment of Diseases, 427
——— Laryngoscopy, 464
——— Trousseau's Medical Clinic of Hôtel-Dieu, 169
Révillout, lemon-juice in diphtheria, 524
Reyburn, diseases among freed-people, 365

Rheumatism, hypodermic injections in, 525
Rhus toxicodendron, poisoning by fruit of, 560
Richardson, exposition of Snow's theory of cause of cholera, 521
———, new means of producing anæsthesia, 512
——— on the Possibility of Restoring Life after its Manifestations have ceased, notice of, 225
———, ozone, 276
———, physiological action of amyl compounds, 240
———, report of public health of New York, 477
Ringer, use of thermometer in acute disease, 241
Rochester, dislocation of patella on its axis, 564
Roger, children's diseases, 243
Roosa, artificial membrana tympani, 106
Rouse, changes in fundus of eye in progressive myopia, 549
Rutherford, wounds of joints, 544

S.

Salisbury, cause of intermittent and remittent fevers, 51
———, histology, &c., of spleen, 307
Sands, uterine tumours, 284
Sasse, physiological action of iron, 515
Scanzoni, ovariotomy, 548
Scarlet fever in Pennsylvania, 210
Semeleder on Laryngoscopy, review of, 464
Ships of war, causes of certain diseases on, 75
Shoulder-joint, amputation at, 143
——— presentation, 395
Simpson, bichloride of carbon as an anæsthetic, 513
Sims, procidentia uteri, 554
Skae, climacteric insanity, 251
Skin, animal parasitic diseases of, 246
Skull, fissured fracture of external table by a bullet striking inside the cranium, 261
——, fracture of, 413
——— of base of, 412
Smallpox in Pennsylvania, 211
Smith, non-officinal compounds of iodine, 476
Snow, theory of cause of cholera, 521
Solanum paniculatum, 515
Spina bifida, 411
Spinal cord, gunshot wound of, 414
Spine, trephining, 546
Spleen, abscess of, 424
———, histology, &c., of, 307
———, removal of enlarged, 258
———, when most actively engaged in its functions, 237
Spotted fever, 209
Sprague, dermoid tumour of the conjunctiva, 281
Squire, animal parasitic diseases of skin, 246
Statistics, medical, Bernard on, 517
Stevens, blood diseases, 479
Stillé, cancer of ascending colon, 160
——, fatal peritonitis in typhoid fever, 167
Stiles, Direct Influence of Agents on Muscular Tissue of Bloodvessels, notice of, 223
Stokes, congenital luxation of patella, 259
Storer, removal of uterus and both ovaries, 110
Strumous ophthalmia with reflex contraction of orbicularis palpebrarum, 263
Subcutaneous injections, danger of, 240
——— ulceration, 535
Sulphate of quinia, hypodermic injections of in rheumatism, &c., 525
Sulphite of soda, a cure for sycosis menti, 281
Supra-renal capsules, disease of, 250
Surgeon-General U. S. A., annual report, notice of, 508
Surgical instruments, 147
Sycosis menti, cured by sulphite of soda, 281
Syme's principles of surgery, notice of, 230
——, removal of entire tongue, 539
Sympathetic ophthalmia, 264
Symptomatic bronchial irritation, 94
Syphilis, hereditary, treatment of without mercury, 253

T.

Talipes, gutta-percha shoe for, 562
Tamburini's translation of Bumstead on Venereal Diseases, notice of, 236
Tanner's Practice of Medicine, notice of, 229
Tapeworm, 559
Taunton Insane Hospital, notice of Report of, 482
Taylor, uses and abuses of tenotomy, 473
——, placenta prævia, 476
Teevan, fissured fracture of external table of skull, 261
Temporal bone, fracture of with rupture of arteria meningea media, 413
Tenotomy, uses and abuses of, 473
Testis, cancer of, 536
Tetanus, puerperal, 102
———, traumatic, successfully treated, 255
Thermometer, use of in acute disease, 241
Thyroid gland, gunshot wound of, 414
Tibia, exsection of part of, 279
Tongue, inflammatory disease of, 80
——, removal of entire, 259, 538, 539
——, tumours on posterior part of, 163
Torpedo wounds, 369
Trachea, ruptures of, 378
Tracheotomy for fracture of larynx, 261
Transactions of the College of Physicians of Philadelphia, 153
——— Medical Society of the State of New York, notice of, 473
——— Medical Society of the State of Pennsylvania, notice of, 207
Trephining spine, 546
Trichinosis at Hedersleben, 531
Trousseau's Clinic of Hôtel-Dieu, review of, 168
Tubercle, infiltrated, 406
Tubercular meningitis, 409
Tumour on posterior part of tongue, 163
Turning, wire-ribbon to aid in, 552
Typhoid fever, fatal peritonitis in, 167
Typhus fever, Da Costa on, 17

U.

Umbilical hemorrhage, 560
U. S. Government Hospital for Insane, notice of Report of, 487

Urine, retention of in fœtus, 276
Uterine tumours, 284
Uterus and both ovaries, removal of, 110
——— bifid, 286
——— reduction of inverted, 149, 403, 479
——— rupture of, abdominal section, 274

V.

Vaccination, 476, 477
Vaccine lymph, degeneracy by frequent transmission, 248
Vanderpool, pathology of pneumonia, 475
Variola, intra-uterine, 275
Vermont Asylum for Insane, notice of report, 481
Veratrum viride, alkaloids of, 565
Vesico and recto-vaginal fistula, 493

W.

Waters, morbid anatomy and early signs of pneumonia, 518
West on Diseases of Children, notice of, 510
Wells, removal of enlarged spleen, 258
Wilks, aphthæ in adults, 244
Williams, tubercular meningitis, 409
Wilson, Students' Book of Cutaneous Medicine, notice of, 509
Winslow, obscure diseases of brain and mind, notice of, 224
Wire-ribbon in cases of turning, 552
Wolff, inhalation of oxygen in phthisis and anæmia, 249
Worcester Asylum for Insane, reports of, 481
Wounds of joints, 544

Y.

Yellow fever at Pensacola, 340
Young, fatal accidental hemorrhage, 272

JEFFERSON MEDICAL COLLEGE.

SUMMER COURSE OF LECTURES.

The Summer Course of Lectures in this College will begin on Monday, April 2d, 1866, and continue, with a recess in July and August, until the 6th of October.

The Clinical department of the Course will be Illustrated at the College, the Wills Hospital, and the Philadelphia Hospital, by the members of the Association during their terms of service at these Institutions.

The Courses will be of an entirely practical character, embracing important specialties in Medicine and Surgery, with extensive Clinical Illustrations.

The Lectureships are constituted as follows:—

Clinical Surgery	Profs. Gross & Pancoast.
" Obstetrics	" Wallace.
Pathology	" Dickson.
Hygiene and Meteorology	" Rand.
Materia Medica and Therapeutics	" Biddle.
Clinical Medicine	Dr. DaCosta.
Visceral and Surgical Anatomy	" W. H. Pancoast.
Operative and Minor Surgery	" S. W. Gross.
Physiology	" J. Aitken Meigs.
Ophthalmic Surgery	" R. J. Levis.
Venereal Diseases	" F. F. Maury.

Fee for the full course $35 for non-matriculates.

For further information apply at the College, or 1005 Walnut Street.

Philadelphia, March 1, 1866. F. F. MAURY, *Secretary of Assoc.*

HARVARD UNIVERSITY.

SUMMER SESSION OF THE MEDICAL DEPARTMENT.

The Annual Course of Summer Instruction in the Medical Department of Harvard University will commence at the Massachusetts Medical College, in North Grove Street, Boston, on Monday, March 12, 1866, and continue till November.

Clinical, Medical and Surgical Instruction will be given at the Mass. General Hospital, adjoining the College, at the City Hospital, and at the Boston Dispensary.

Recitations from approved text-books will be held daily during the session at the College, upon all branches necessary to a medical education. Occasional lectures are also given, and demonstrations, illustrated by the Museums of the College.

During the Summer Session, instruction is given by lectures at Cambridge, on Botany, by Prof. Gray; on Comparative Anatomy, by Prof. Wyman; on Zoology, by Prof. Agassiz; on Acoustics and Optics, by Prof. Lovering. To these lectures, students of the Summer Session will be admitted without extra charge.

Fees for the Summer Term (which must be paid in advance), $100, without extra charge for Matriculation, Hospital, Library or Dissections; for six months, $100; for three months, $50.

D. Humphreys Storer, M. D., Professor of Obstetrics and Medical Jurisprudence.
John B. S. Jackson, M. D., Professor of Morbid Anatomy.
Henry I. Bowditch, M. D., Professor of Clinical Medicine.
Calvin Ellis, M. D., Adjunct Professor of Clinical Medicine.
Oliver W. Holmes, M. D., Professor of Anatomy and Physiology.
George C. Shattuck, M. D., Hersey Professor of the Theory and Practice of Physic.
C. E. Buckingham, M. D., Adjunct Professor of the Theory and Practice of Physic.
Henry J. Bigelow, M. D., Professor of Surgery and Clinical Surgery.
John Bacon, M. D., Professor of Chemistry.
Edward H. Clarke, M. D., Professor of Materia Medica.
David W. Cheever, M. D., Demonstrator.
J. E. Tyler, M. D., Assistant in Theory and Practice.
Samuel L. Abbot, M. D., Assistant in Clinical Medicine.
Fitch E. Oliver, M. D., Assistant in Materia Medica.
Francis Minot, M. D., Assistant in Theory and Practice.
Richard M. Hodges, M. D., Assistant in Surgery.
Horatio R. Storer, M. D., Assistant in Obstetrics.
J. Nelson Borland, M. D., Assistant in Clinical Medicine.
James C. White, M. D., Assistant in Chemistry.

Tickets to the Session must be procured before students will be admitted to the Course. GEORGE C. SHATTUCK, Dean of the Faculty,
No. 2 Staniford Street, Boston.

Circulars can be obtained gratis, upon application to David Clapp & Son, Medical and Surgical Journal Office, over 334 Washington Street, Boston. Jan. 1st, 1866.

[Jan. and April.]

UNIVERSITY OF MARYLAND.

The Fifty-Ninth Session of the School of Medicine, in the University of Maryland, will commence on Monday, the 15th of October, 1866, and will end on the 1st of March, 1867.

FACULTY OF PHYSIC.

NATHAN R. SMITH, M. D., Professor of Surgery.
WM. E. A. AIKIN, M. D., LL.D., Professor of Chemistry and Pharmacy.
G. W. MILTENBERGER, M. D., Professor of Obstetrics and the Diseases of Women and Children.
RICHARD MCSHERRY, M. D., Professor of Institutes and Practice of Medicine, and of Hygiene.
CHRISTOPHER JOHNSTON, M. D., Professor of Anatomy and Physiology.
SAMUEL C. CHEW, M. D., Professor of Materia Medica and Therapeutics.
F. DONALDSON, M. D., Professor of Physiology and General Pathology.
JAMES H. BUTLER, M. D., Demonstrator of Anatomy.

The fees for the full course are $105.00. For Matriculation $5.00. For Practical Anatomy $10.00.

The Baltimore Infirmary is a large hospital attached to the College. The Infirmary is an admirable school for clinical instruction, which is open every day throughout the year to the students, where they may witness surgical operations, observe practice, and attend clinical lectures by the various professors at all seasons, without any additional charge. There is always a staff of graduates resident in the Infirmary, besides a limited number of students who are admitted as Clinical Assistants.

Anatomical material is abundant for the study of practical anatomy.

Circulars containing fuller information may be obtained by application to any member of the Faculty.

GEORGE W. MILTENBERGER, M. D., *Dean.*

BALTIMORE, March, 1866.

BERKSHIRE MEDICAL COLLEGE.

THE Forty-Fourth Annual Course of Lectures in this Institution will commence on Thursday, June 14th, 1866, and continue eighteen weeks.

FACULTY.

H. H. CHILDS, M. D., President.
WM. WARREN GREENE, M. D., Dean.
HENRY H. CHILDS, M. D., Emeritus Professor of the Theory and Practice of Medicine.
CORYDON L. FORD, A. M., M. D., Professor of Anatomy and Physiology.
WM. WARREN GREENE, M. D., Professor of Principles and Practice of Surgery and Clinical Surgery.
ALONZO B. PALMER, A. M., M. D., Professor of Pathology and Practice of Medicine.
WM. C. RICHARDS, A. M., M. D., Professor of Chemistry and Natural History.
HORATIO R. STORER, A. M., M. D., Professor of Obstetrics and Diseases of Women.
A. B PALMER, A. M., M. D., Acting Professor of Materia Medica and Therapeutics.
HORATIO R. STORER, A. M., M. D., Acting Professor of Medical Jurisprudence.

FRANK K. PADDOCK, M. D., Demonstrator of Anatomy and Prosector of Surgery.

By the recent action of the officers of the College, two weeks have been added to the Course, making it now eighteen weeks in length; and it will hereafter commence on the Thursday nearest the middle of June, instead of the first Thursday in August, as heretofore; thus giving time for a *full* Summer Course without interfering with the Winter or Spring terms of other schools.

It is intended that the course of instruction in each department shall be *eminently* thorough.

Medical and Surgical Clinics are held every Wednesday and Saturday.

Several valuable prizes are offered in different departments.

Circulars containing full information sent on application to

WM. WARREN GREENE, M. D., *Dean.*

PITTSFIELD, MASS., February 17, 1866.

SUMMER SCHOOL OF MEDICINE.

No. 920 Chestnut Street, Philadelphia.

ROBERT BOLLING, M.D., JAS. H. HUTCHINSON, M.D., H. LENOX HODGE, M.D.

EDWARD A. SMITH, M. D., D. MURRAY CHESTON, M. D., HORACE WILLIAMS, M. D.

The Summer School of Medicine will begin its second term on March 1st, 1866, and students may enjoy its privileges without cessation until October.

The regular Course of *Examinations* and *Lectures* will be given during April, May, June, and September, upon

ANATOMY, SURGERY, CHEMISTRY, PHYSIOLOGY, OBSTETRICS, MATERIA MEDICA, PRACTICE OF MEDICINE.

The subjects will be studied by the aid of Specimens, Manikins, Demonstrations, and Clinical Examinations of Patients.

Students will be given access to the Pennsylvania, Episcopal, and Children's Hospitals. The employment of the Microscope, and the microscopic appearance of the tissues and fluids in health and disease, with the chemical tests and reactions, will also be taught.

FEE, ... $50.

For further information, apply to

H. LENOX HODGE, M. D.,
N. W. corner Ninth and Walnut Streets.

THE GREAT SYSTEM OF MIDWIFERY—Just Issued.

THE

PRINCIPLES AND PRACTICE OF OBSTETRICS.

Illustrated with large Lithographic Plates, containing

ONE HUNDRED AND FIFTY-NINE FIGURES FROM ORIGINAL PHOTOGRAPHS,

And with numerous Wood-cuts.

BY HUGH L. HODGE, M. D.,

Emeritus Professor of Obstetrics and Diseases of Women and Children in the University of Pennsylvania.

In one large and splendidly printed quarto volume, of five hundred and fifty double-columned pages, strongly done up in extra cloth; price $14 00.

This work, embodying the results of an extensive practice for more than forty years, cannot fail to prove of the utmost value to all who are engaged in this department of medicine. The author's position as one of the highest authorities on the subject in this country is well known, and the fruit of his ripe experience and long observation, carefully matured and elaborated, must serve as an invaluable text-book for the student and an unfailing counsel for the practitioner in the emergencies which so frequently arise in obstetric practice.

The illustrations form a novel feature in the work. The lithographic plates are all original, and to insure their absolute accuracy they have all been copied from photographs taken expressly for the purpose. In ordinary obstetrical plates, the positions of the fœtus are represented by diagrams or sections of the patient, which are of course purely imaginary, and their correctness is scarcely more than a matter of chance with the artist. Their beauty as pictures is thereby increased without corresponding utility to the student, as in practice he must for the most part depend for his diagnosis upon the relative positions of the fœtal skull and the pelvic bones of the mother. It is, therefore, desirable that the points upon which he is in future to rely should form the basis of his instruction, and consequently in the preparation of these illustrations the skeleton has alone been used, and the aid of photography invoked, by which a series of representations has been secured of the strictest and most rigid accuracy. It is easy to recognize the value thus added to the very full details on the subject of the MECHANISM OF LABOR with which the work abounds.

It may be added that no pains or expense have been spared to render the mechanical execution of the volume worthy in every respect of the character and value of the teachings it contains.

Dr. Hodge having been engaged for thirty-one years in the teaching of Obstetrics, has very justly thought that the results of his large experience and reflections might be of advantage to the profession. These he has therefore communicated in a handsome, well illustrated volume. An excellent text-book; while he shows that in the management of parturient women he has been guided quite as much by his personal experience as by the teachings of other men. A valuable contribution to medical literature. It gives evidence of very hard work, and it shows that Dr. Hodge may say, in the words of Baudelocque, "Though the reading of authors has been of great use to me, it will be found that the study of nature has been of much more."—*London Lancet*, Aug. 20, 1864.

Works on Cutaneous Diseases.

HAND-BOOK OF SKIN DISEASES,

FOR STUDENTS AND PRACTITIONERS.

BY THOMAS HILLIER, M.D.,

Physician to the Skin Department of University College Hospital; Physician to the Hospital for Sick Children, &c. &c.

In one neat royal 12mo. volume, of about 300 pages, with two plates; extra cloth, price $2 25. (Just Issued.)

The author's position, both as a lecturer, writer, and practitioner in this department of medicine, is a guarantee of his ability to accomplish his object in presenting a condensed and convenient manual, which shall comprise all that the general practitioner requires for his guidance.

A text-book well adapted to the student, and the information contained in it shows the author to be *au niveau* with the scientific medicine of the day.—*London Lancet*, Feb. 25, 1865.

We can conscientiously recommend it to the student; the style is clear and pleasant to read, the matter is good, and the descriptions of disease, with the modes of treatment recommended, are frequently illustrated with well-recorded cases.—*London Med. Times and Gazette*, April 1, 1865.

The Standard work on the Skin—New Edition—(Lately Issued.)

ON DISEASES OF THE SKIN.

BY ERASMUS WILSON, F.R.S.,

Author of "A System of Human Anatomy," &c.

The Sixth American, from the Fifth and Enlarged London Edition.

In one large octavo volume of nearly 700 pages; extra cloth, $4 50.

This classical work, which for twenty years has occupied the position of the leading authority in the English language on its important subject, has lately received a thorough revision at the hands of the author, and is now presented as embodying the results of the latest investigations on all matters connected with diseases of the skin. The increase in the size of the work shows the industry of the author, and his determination that it shall maintain the position which it has acquired as thoroughly on a level with the most advanced condition of medical science.

No matter what other treatises may be in the library of the medical attendant, he needs the clear and suggestive counsels of Wilson, who is thoroughly posted up on all subjects connected with cutaneous pathology. We have, it is very true, other valuable works on the maladies that invade the skin; but, compared with the volume under consideration, they are certainly to be regarded as inferior lights in guiding the judgment of the medical man.—*Boston Med. and Surg. Journal.*

The author adopts a simple and entertaining style. He strives to clear away the complications of his subject, and has thus produced a book filled with a vast amount of information, in a form so agreeable as to make it pleasant reading, even to the uninitiated. More especially does it deserve our praise because of its beautiful and complete atlas, which the American publishers have successfully imitated from the original plates.—*Va. Med. Journal.*

ALSO, LATELY ISSUED,

A SERIES OF PLATES ILLUSTRATING "WILSON ON DISEASES OF THE SKIN." Consisting of twenty beautifully executed plates, of which thirteen are exquisitely colored. Presenting the Normal Anatomy and Pathology of the Skin, and embracing accurate representations of about one hundred varieties of Disease, most of them the size of nature. Price, in extra cloth, $5 50.

*** Also, the TEXT and PLATES done up in one handsome volume, extra cloth, price $9 50.

BY THE SAME AUTHOR.

HEALTHY SKIN; a Popular Treatise on the Skin and Hair, their Preservation and Management. Second American, from the fourth London edition. One neat volume, royal 12mo., extra cloth, of about 300 pages, with numerous illustrations. $1 00.

NELIGAN ON THE SKIN.

ATLAS OF CUTANEOUS DISEASES.

BY J. MOORE NELIGAN, M.D., M.R.I.A.,

Lecturer on the Practice of Medicine in the Dublin School of Medicine, &c.

In one beautiful quarto volume, with exquisitely colored plates, presenting about one hundred elaborate representations of disease. Price $5 50.

ALSO, TO ACCOMPANY THE ABOVE:

A PRACTICAL TREATISE ON DISEASES OF THE SKIN.

FOURTH AMERICAN EDITION.

In one neat royal 12mo. volume, extra cloth, of 334 pages; price $1 50.

HENRY C. LEA'S

(LATE LEA & BLANCHARD'S,)

MEDICAL AND SURGICAL PUBLICATIONS.

TO THE READERS OF THE MEDICAL JOURNAL.

The prices on this Catalogue are those at which these books can generally be furnished by booksellers, who can readily procure for their customers any which they may not have on hand. Where access to bookstores is not convenient, I will forward them at these prices, *free by mail*, to any post office in the United States. In all cases the amount must accompany the order, as accounts are opened only with dealers. I assume no risks of the mail, either on the money or the books, and can supply nothing but my own publications. Gentlemen desirous of purchasing will, therefore, find it more advantageous to deal with the nearest bookseller whenever practicable, or to send orders through their merchants visiting the larger cities.

HENRY C. LEA.

Nos. 706 and 708 SANSOM STREET, PHILADELPHIA, April, 1866.

*** Just issued, a revised ILLUSTRATED CATALOGUE of Medical and Scientific Publications, forming an octavo pamphlet of 80 large pages, containing specimens of illustrations, notices of the medical press, &c. &c. It has been prepared without regard to expense, and will be found one of the handsomest specimens of typographical execution as yet presented in this country. Copies will be sent to any address, by mail, free of postage, on receipt of nine cents in stamps.

Catalogues of publications in miscellaneous and educational literature forwarded on application.

☞ The attention of physicians is especially solicited to the following important new works and new editions, just issued or nearly ready:—

Ashton on the Rectum, new edition, ... See page 579
Brinton on the Stomach, ... " 580
Bennett on the Uterus, sixth edition, ... " 580
Bowman's Medical Chemistry, fourth edition, ... " 580
Bumstead on Venereal, second edition, ... " 581
Barclay on Medical Diagnosis, third edition, ... " 581
Brande and Taylor's Chemistry, ... " 582
Dalton's Human Physiology, 3d edition, ... " 587
Dunglison's Medical Dictionary, a revised edition, 1865, ... " 588
Ellis' Formulary, new edition, ... " 589
Erichsen's System of Surgery, a revised edition, ... " 590
Flint's Practice of Medicine, now ready, ... " 59
Gross's System of Surgery, third edition, ... " 592
Gray's Anatomy, Descriptive and Surgical, 2d edition, ... " 593
Hillier on Skin Diseases, ... " 594
Hamilton on Fractures and Dislocations, second edition, ... " 594
Hodge's Obstetrics, ... " 595
Pereira's Materia Medica, condensed edition, preparing, ... " 600
Roberts on Urinary Diseases, now ready, ... " 600
Parrish's Practical Pharmacy, a new edition, ... " 601
Smith on Consumption, ... " 604
Stillé's Therapeutics and Materia Medica, second edition, ... " 603
Wilson on the Skin, fifth edition, ... " 607
Winslow on the Brain and Mind, second edition, ... " 608
West on Children, fourth edition, ... " 608

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES

AND THE MEDICAL NEWS AND LIBRARY,

For FIVE DOLLARS per annum, invariably in Advance.

To avoid raising the price at which the "MEDICAL JOURNAL" has been published for nearly fifty years, subscriptions are now only taken payable in advance. The result of this policy during 1865 has been a largely increased subscription list, which exhausted the whole edition printed.

The publisher trusts to be sustained, by an enlarged circulation, in this course, which gives to the subscriber, notwithstanding the enormous advance in the cost of production, nearly FIFTEEN HUNDRED LARGE OCTAVO PAGES for the very moderate price of Five Dollars.

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES,

EDITED BY ISAAC HAYS, M. D.,

is published Quarterly, on the first of January, April, July, and October. Each number contains about two hundred and seventy large octavo pages, handsomely and appropriately illustrated, wherever necessary. It has now been issued regularly for more than FORTY years, and it has been under the control of the present editor nearly the whole of that period. Throughout this long period, it has maintained its position in the highest rank of medical periodicals both at home and abroad, and has received the cordial support of the entire profession in this country. Its list of Collaborators will be found to contain a large number of the most distinguished names of the profession in every section of the United States, rendering the department devoted to

ORIGINAL COMMUNICATIONS

full of varied and important matter, of great interest to all practitioners.

As the aim of the Journal, however, is to combine the advantages presented by all the different varieties of periodicals, in its

REVIEW DEPARTMENT

will be found extended and impartial reviews of all important new works, presenting subjects of novelty and interest, together with very numerous

BIBLIOGRAPHICAL NOTICES,

including nearly all the medical publications of the day, both in this country and Great Britain, with a choice selection of the more important continental works. This is followed by the

QUARTERLY SUMMARY,

being a very full and complete abstract, methodically arranged, of the

IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

This department of the Journal, so important to the practising physician, is the object of especial care on the part of the editor. It is classified and arranged under different heads, thus facilitating the researches of the reader in pursuit of particular subjects, and will be found to present a very full and accurate digest of all observations, discoveries, and inventions recorded in every branch of medical science. The very extensive arrangements of the publishers are such as to afford to the editor complete materials for this purpose, as he not only regularly receives

ALL THE AMERICAN MEDICAL AND SCIENTIFIC PERIODICALS,

but also twenty or thirty of the more important Journals issued in Great Britain and on the Continent, thus enabling him to present in a convenient compass a thorough and complete abstract of everything interesting or important to the physician occurring in any part of the civilized world.

To old subscribers, many of whom have been on the list for twenty or thirty years, the publisher feels that no promises for the future are necessary; but those who may desire for the first time to subscribe, can rest assured that no exertion will be spared to maintain the Journal in the high position which it has occupied for so long a period.

By reference to the terms it will be seen that, in addition to this large amount of valuable and practical information on every branch of medical science, the subscriber receives, without further charge,

THE MEDICAL NEWS AND LIBRARY,

a monthly periodical of thirty-two large octavo pages. Its "NEWS DEPARTMENT" presents the current information of the day, while the "LIBRARY DEPARTMENT" is devoted to presenting standard works on various branches of medicine. Within a few years, subscribers have thus received, without expense, many works of the highest character and practical value, such as "Watson's Practice," "Todd and Bowman's Physiology," "Malgaigne's Surgery," "West on Children," "West on Females, Part I.," "Habershon on the Alimentary Canal," "Simpson on Females," &c.

The work at present appearing in its columns, to be completed in 1866, is

CLINICAL OBSERVATIONS ON FUNCTIONAL NERVOUS DISORDERS,

By C. Handfield Jones, M.D., F.R.S., &c.

As a practical treatise on a class of frequent and intractable diseases, such as Paralysis, Epilepsy, Neuralgia, Delirium Tremens, Chorea, Hysteria, &c. &c., the publisher believes that he could not lay before subscribers a more acceptable work.

It will thus be seen that for the small sum of FIVE DOLLARS, paid in advance, the subscriber will obtain a Quarterly and a Monthly periodical,

EMBRACING ABOUT FIFTEEN HUNDRED LARGE OCTAVO PAGES.

Remittances of subscriptions can be mailed at my risk, when a certificate is taken from the Postmaster that the money is duly inclosed and forwarded.

Address HENRY C. LEA, PHILADELPHIA.

ASHTON (T. J.),

Surgeon to the Blenheim Dispensary, &c.

ON THE DISEASES, INJURIES, AND MALFORMATIONS OF THE RECTUM AND ANUS; with remarks on Habitual Constipation. Second American, from the fourth and enlarged London edition. With handsome illustrations. In one very beautifully printed octavo volume, of about 300 pages. $3 25. *(Now Ready.)*

The most complete one we possess on the subject. *Medico-Chirurgical Review.*

We are satisfied, after a careful examination of the volume, and a comparison of its contents with those of its leading predecessors and contemporaries, that the best way for the reader to avail himself of the excellent advice given in the concluding paragraph above, would be to provide himself with a copy of the book from which it has been taken, and diligently to con its instructive pages. They may secure to him many a triumph and fervent blessing.—*Am. Journal Med. Sciences.*

This is a new and carefully revised edition of one of the most valuable special treatises that the physician and surgeon can have in his library.—*Chicago Medical Examiner*, Jan. 1866.

The short period which has elapsed since the appearance of the former American reprint, and the numerous editions published in England, are the best arguments we can offer of the merits, and of the uselessness of any commendation on our part of a book already so favorably known to our readers. —*Boston Med. and Surg. Journal*, Jan 25, 1866.

ALLEN (J. M.), M. D.,

Professor of Anatomy in the Pennsylvania Medical College, &c.

THE PRACTICAL ANATOMIST; or, The Student's Guide in the Dissecting-ROOM. With 266 illustrations. In one handsome royal 12mo. volume, of over 600 pages, extra cloth. $2 00.

We believe it to be one of the most useful works upon the subject ever written. It is handsomely illustrated, well printed, and will be found of convenient size for use in the dissecting-room.—*Med. Examiner.*

However valuable may be the "Dissector's Guides" which we, of late, have had occasion to notice, we feel confident that the work of Dr. Allen is superior to any of them. We believe with the author, that none is so fully illustrated as this, and the arrangement of the work is such as to facilitate the labors of the student. We most cordially recommend it to their attention.—*Western Lancet.*

ANATOMICAL ATLAS,

By Professors H. H. SMITH and W. E. HORNER, of the University of Pennsylvania. 1 vol. 8vo., extra cloth, with nearly 650 illustrations. ☞ See SMITH, p. 26.

ABEL (F. A.), F. C. S. AND C. L. BLOXAM.

HANDBOOK OF CHEMISTRY, Theoretical, Practical, and Technical; with a Recommendatory Preface by Dr. HOFMANN. In one large octavo volume, extra cloth, of 662 pages, with illustrations. $4 50.

ASHWELL (SAMUEL), M. D.,

Obstetric Physician and Lecturer to Guy's Hospital, London.

A PRACTICAL TREATISE ON THE DISEASES PECULIAR TO WOMEN. Illustrated by Cases derived from Hospital and Private Practice. Third American, from the Third and revised London edition. In one octavo volume, extra cloth, of 528 pages. $3 50.

The most useful practical work on the subject in the English language.—*Boston Med. and Surg. Journal.*

The most able, and certainly the most standard and practical, work on female diseases that we have yet seen.—*Medico-Chirurgical Review.*

ARNOTT (NEILL), M. D.

ELEMENTS OF PHYSICS; or Natural Philosophy, General and Medical. Written for universal use, in plain or non-technical language. A new edition, by ISAAC HAYS, M. D. Complete in one octavo volume, leather, of 484 pages, with about two hundred illustrations. $2 25.

BARLOW (GEORGE H.), M. D.

Physician to Guy's Hospital, London, &c.

A MANUAL OF THE PRACTICE OF MEDICINE. With Additions by D. F. CONDIE, M. D., author of "A Practical Treatise on Diseases of Children," &c. In one handsome octavo volume, extra cloth, of over 600 pages. $2 50.

We recommend Dr. Barlow's Manual in the warmest manner as a most valuable vade-mecum. We have had frequent occasion to consult it, and have found it clear, concise, practical, and sound.—*Boston Med. and Surg. Journal.*

BUCKLER ON THE ETIOLOGY, PATHOLOGY AND TREATMENT OF FIBRO-BRONCHITIS AND RHEUMATIC PNEUMONIA. In one 8vo. volume, extra cloth. pp. 150. $1 25.

BRODIE'S CLINICAL LECTURES ON SURGERY. 1 vol. 8vo. cloth. 350 pp. $1 25

BIRD ON URINARY DEPOSITS. See Roberts on Urinary Diseases, p. 24.

BLOOD AND URINE (MANUALS ON). BY J. W. GRIFFITH, G. O. REESE, AND A. MARKWICK. One volume, royal 12mo., extra cloth, with plates. pp. 400. $1 25.

BEALE ON THE LAWS OF HEALTH IN RELATION TO MIND AND BODY. In one vol. royal 12mo., extra cloth. pp. 236. 80 cents.

BUDD (GEORGE), M. D., F. R. S.,

Professor of Medicine in King's College, London.

ON DISEASES OF THE LIVER. Third American, from the third and enlarged London edition. In one very handsome octavo volume, extra cloth, with four beautifully colored plates, and numerous wood-cuts. pp. 500. $4 00.

Has fairly established for itself a place among the classical medical literature of England.—*British and Foreign Medico-Chir. Review.*

Dr. Budd's Treatise on Diseases of the Liver is now a standard work in Medical literature, and during the intervals which have elapsed between the successive editions, the author has incorporated into the text the most striking novelties which have characterized the recent progress of hepatic physiology and pathology; so that although the size of the book is not perceptibly changed, the history of liver diseases is made more complete, and is kept upon a level with the progress of modern science. It is the best work on Diseases of the Liver in any language.—*London Med. Times and Gazette.*

BUCKNILL (J. C.), M. D., AND DANIEL H. TUKE, M. D.,

Medical Superintendent of the Devon Lunatic Asylum. Visiting Medical Officer to the York Retreat.

A MANUAL OF PSYCHOLOGICAL MEDICINE; containing the History, Nosology, Description, Statistics, Diagnosis, Pathology, and Treatment of INSANITY. With a Plate. In one handsome octavo volume, of 536 pages, extra cloth. $4 25.

The increase of mental disease in its various forms, and the difficult questions to which it is constantly giving rise, render the subject one of daily enhanced interest, requiring on the part of the physician a constantly greater familiarity with this, the most perplexing branch of his profession. Yet until the appearance of the present volume there has been for some years no work accessible in this country, presenting the results of recent investigations in the Diagnosis and Prognosis of Insanity, and the greatly improved methods of treatment which have done so much in alleviating the condition or restoring the health of the insane.

BENNETT (HENRY), M. D.

A PRACTICAL TREATISE ON INFLAMMATION OF THE UTERUS, ITS CERVIX AND APPENDAGES, and on its connection with Uterine Disease. Sixth American, from the fourth and revised English edition. In one octavo volume, of about 500 pages, extra cloth. $3 75. (*Just Issued.*)

This standard work, which has done so much to introduce the modern and improved treatment of female diseases, has received a very careful revision at the hands of the author. In his preface he states: "During the past two years this revision of former labors has been my principal occupation, and in its present state the work may be considered to embody the matured experience of the many years I have devoted to the study of uterine disease."

BRINTON (WILLIAM), M. D F. S.,

Physician to St. Thomas's Hospital.

LECTURES ON THE DISEASES OF THE STOMACH, with an introduction on its Anatomy and Physiology. From the second and enlarged London edition. With illustrations on wood. In one large and handsome octavo volume. $3 25. (*Just Ready.*)

The entire series of lectures embraced in the volume before us are well worthy of a close study on the part of every one desirous of acquiring correct views in relation to the nature and treatment of the diseases of the stomach. Nowhere can be found a more full, accurate, plain, and instructive history of those diseases, or more rational views respecting their pathology and therapeutics.—*American Journal of the Med. Sciences*, April, 1865.

This is no mere compilation, no crude record of cases, but the carefully elaborated production of an accomplished physician, who, for many years, has devoted special attention to the symptomatology, pathology, and treatment of gastric diseases.—*Edinburgh Med. Journal.*

Dr. Brinton's position as a laborer in medical science and a medical author is fully established, and these lectures have only added to a reputation based on many solid grounds. The work is an important one, and we argue for it a great place in medical literature.—*London Lancet*, Dec. 3, 1864.

BOWMAN (JOHN E.), M. D.

PRACTICAL HANDBOOK OF MEDICAL CHEMISTRY. Edited by C. L. Bloxam. Fourth American, from the fourth and revised English Edition. In one neat volume, royal 12mo., extra cloth with numerous illustrations. pp. 351. $2 25.

Of this well-known handbook we may say that it retains all its old simplicity and clearness of arrangement and description, whilst it has received from the able editor those finishing touches which the progress of chemistry has rendered necessary.—*London Med. Times and Gazette*, Nov. 29, 1862.

Nor is anything hurried over, anything shirked; open the book where you will, you find the same careful treatment of the subject manifested, and the best process for the attainment of the particular object in view lucidly detailed and explained. And this new edition is not merely a reprint of the last. With a laudable desire to keep the book up to the scientific mark of the present age, every improvement in analytical method has been introduced. In conclusion, we would only say that, familiar from long acquaintance with each page of the former issues of this little book, we gladly place beside them another presenting so many acceptable improvements and additions.—*Dublin Medical Press.*

BY THE SAME AUTHOR.

INTRODUCTION TO PRACTICAL CHEMISTRY, INCLUDING ANALYSIS. Third American, from the third and revised London edition. With numerous illustrations. In one neat vol., royal 12mo., extra cloth. $2 25

This favorite little manual has received a very thorough and careful revision at the hands of a competent editor, and will be found fully brought up to the present condition of chemical science. Many portions have been rewritten, the subjects of the blow-pipe and volumetric analysis have received special attention, and an additional chapter has been appended. Students of practical chemistry will therefore find it, as heretofore, a most convenient and condensed text-book and guide in the operations of the laboratory.

BUMSTEAD (FREEMAN J.) M. D.,

Lecturer on Venereal Diseases at the College of Physicians and Surgeons, New York, &c.

THE PATHOLOGY AND TREATMENT OF VENEREAL DISEASES,

including the results of recent investigations upon the subject. Second edition, thoroughly revised and much improved. With illustrations on wood. In one very handsome octavo volume, of about 700 pages. $5 00 *(Just Issued.)*

By far the most valuable contribution to this particular branch of practice that has seen the light within the last score of years. His clear and accurate descriptions of the various forms of venereal disease, and especially the methods of treatment he proposes, are worthy of the highest encomium. In these respects it is better adapted for the assistance of the every-day practitioner than any other with which we are acquainted. In variety of methods proposed, in minuteness of direction, guided by careful discrimination of varying forms and complications, we write down the book as unsurpassed. It is a work which should be in the possession of every practitioner.—*Chicago Med. Journal.* Nov. 1861.

The foregoing admirable volume comes to us, embracing the whole subject of syphilology, resolving many a doubt, correcting and confirming many an entertained opinion, and in our estimation the best, completest, fullest monograph on this subject in our language. As far as the author's labors themselves are concerned, we feel it a duty to say that he has not only exhausted his subject, but he has presented to us, without the slightest hyperbole, the best digested treatise on these diseases in our language. He has carried its literature down to the present moment, and has achieved his task in a manner which cannot but redound to his credit.—*British American Journal,* Oct. 1861.

We believe this treatise will come to be regarded as high authority in this branch of medical practice, and we cordially commend it to the favorable notice of our brethren in the profession. For our own part, we candidly confess that we have received many new ideas from its perusal, as well as modified many views which we have long, and, as we now think, erroneously entertained on the subject of syphilis. To sum up all in a few words, this book is one which no practising physician or medical student can very well afford to do without.—*American Med. Times,* Nov. 2, 1861.

The whole work presents a complete history of venereal diseases, comprising much interesting and valuable material that has been spread through medical journals within the last twenty years—the period of many experiments and investigations on the subject—the whole carefully digested by the aid of the author's extensive personal experience, and offered to the profession in an admirable form. Its completeness is secured by good plates, which are especially full in the anatomy of the genital organs. We have examined it with great satisfaction, and congratulate the medical profession in America on the nationality of a work that may fairly be called original.—*Berkshire Med. Journal,* Dec. 1861.

One thing, however, we are impelled to say, that we have met with no other book on syphilis, in the English language, which gave so full, clear, and impartial views of the important subjects on which it treats. We cannot, however, refrain from expressing our satisfaction with the full and perspicuous manner in which the subject has been presented, and the careful attention to minute details, so useful—not to say indispensable—in a practical treatise. In conclusion, if we may be pardoned the use of a phrase now become stereotyped, but which we here employ in all seriousness and sincerity, we do not hesitate to express the opinion that Dr. Bumstead's Treatise on Venereal Diseases is a "work without which no medical library will hereafter be considered complete."—*Boston Med. and Surg. Journal* Sept. 5, 1861.

BARCLAY (A. W.), M. D.,

Assistant Physician to St. George's Hospital, &c.

A MANUAL OF MEDICAL DIAGNOSIS; being an Analysis of the Signs and Symptoms of Disease.

Third American from the second and revised London edition. In one neat octavo volume, extra cloth, of 451 pages. $3 50.

The demand for another edition of this work shows that the vacancy which it attempts to supply has been recognized by the profession, and that the efforts of the author to meet the want have been successful. The revision which it has enjoyed will render it better adapted than before to afford assistance to the learner in the prosecution of his studies, and to the practitioner who requires a convenient and accessible manual for speedy reference in the exigencies of his daily duties. For this latter purpose its complete and extensive Index renders it especially valuable, offering facilities for immediately turning to any class of symptoms, or any variety of disease.

The task of composing such a work is neither an easy nor a light one; but Dr. Barclay has performed it in a manner which meets our most unqualified approbation. He is no mere theorist; he knows his work thoroughly, and in attempting to perform it, has not exceeded his powers.—*British Med. Journal.*

We venture to predict that the work will be deservedly popular, and soon become, like Watson's Practice, an indispensable necessity to the practitioner.—*N. A. Med. Journal.*

An inestimable work of reference for the young practitioner and student.—*Nashville Med. Journal.*

We hope the volume will have an extensive circulation, not among students of medicine only, but practitioners also. They will never regret a faithful study of its pages.—*Cincinnati Lancet.*

An important acquisition to medical literature. It is a work of high merit, both from the vast importance of the subject upon which it treats, and also from the real ability displayed in its elaboration. In conclusion, let us bespeak for this volume that attention of every student of our art which it so richly deserves – that place in every medical library which it can so well adorn.—*Peninsular Medical Journal.*

BARTLETT (ELISHA), M. D.

THE HISTORY, DIAGNOSIS, AND TREATMENT OF THE FEVERS OF THE UNITED STATES.

A new and revised edition. By Alonzo Clark, M. D., Prof. of Pathology and Practical Medicine in the N. Y. College of Physicians and Surgeons, &c. In one octavo volume, of six hundred pages, extra cloth. Price $4 25.

BROWN (ISAAC BAKER),

Surgeon-Accoucheur to St. Mary's Hospital, &c.

ON SOME DISEASES OF WOMEN ADMITTING OF SURGICAL TREATMENT.

With handsome illustrations. One vol. 8vo., extra cloth, pp. 276. $1 60.

Mr. Brown has earned for himself a high reputation in the operative treatment of sundry diseases and injuries to which females are peculiarly subject. We can truly say of his work that it is an important addition to obstetrical literature. The operative suggestions and contrivances which Mr. Brown describes, exhibit much practical sagacity and skill, and merit the careful attention of every surgeon-accoucheur.—*Association Journal.*

We have no hesitation in recommending this book to the careful attention of all surgeons who make female complaints a part of their study and practice. —*Dublin Quarterly Journal.*

BRANDE (WM. T.) D. C. L., AND ALFRED S. TAYLOR, M. D., F. R. S.
Of her Majesty's Mint, &c. Professor of Chemistry and Medical Jurisprudence in Guy's Hospital.

CHEMISTRY. In one handsome 8vo. volume of 696 pages, extra cloth. $4 50.

"Having been engaged in teaching Chemistry in this Metropolis, the one for a period of forty, and the other for a period of thirty years, it has appeared to us that, in spite of the number of books already existing, there was room for an additional volume, which should be especially adapted for the use of students. In preparing such a volume for the press, we have endeavored to bear in mind, that the student in the present day has much to learn, and but a short time at his disposal for the acquisition of this learning."—AUTHORS' PREFACE.

In reprinting this volume, its passage through the press has been superintended by a competent chemist, who has sedulously endeavored to secure the accuracy so necessary in a work of this nature. No notes or additions have been introduced, but the publishers have been favored by the authors with some corrections and revisions of the first twenty-one chapters, which have been duly inserted.

In so progressive a science as Chemistry, the latest work always has the advantage of presenting the subject as modified by the results of the latest investigations and discoveries. That this advantage has been made the most of, and that the work possesses superior attractions arising from its clearness, simplicity of style, and lucid arrangement, are manifested by the unanimous testimony of the English medical press.

It needs no great sagacity to foretell that this book will be, literally, the Handbook in Chemistry of the student and practitioner. For clearness of language, accuracy of description, extent of information, and freedom from pedantry and mysticism of modern chemistry, no other text-book comes into competition with it. The result is a work which for fulness of matter, for lucidity of arrangement, for clearness of style, is as yet without a rival. And long will it be without a rival. For, although with the necessary advance of chemical knowledge addenda will be required, there will be little to take away. The fundamental excellences of the book will remain, preserving it for years to come, what it now is, the best guide to the study of Chemistry yet given to the world.—*London Lancet*, Dec. 20, 1862.

Most assuredly, time has not abated one whit of the fluency, the vigor, and the clearness with which they not only have composed the work before us, but have, so to say, cleared the ground for it, by hitting right and left at the affectation, mysticism, and obscurity which pervade some late chemical treatises. Thus conceived, and worked out in the most sturdy, common sense method, this book gives, in the clearest and most summary method possible, all the facts and doctrines of chemistry, with more especial reference to the wants of the medical student.—*London Medical Times and Gazette*, Nov. 29, 1862.

If we are not very much mistaken, this book will occupy a place which none has hitherto held among chemists; for, by avoiding the errors of previous authors, we have a work which, for its size, is certainly the most perfect of any in the English language. There are several points to be noted in this volume which separate it widely from any of its compeers—its wide application, not to the medical student only, nor to the student in chemistry merely, but to every branch of science, art, or commerce which is in any way connected with the domain of chemistry.—*London Med. Review*, Feb. 1863.

BARWELL (RICHARD,) F. R. C. S.,
Assistant Surgeon Charing Cross Hospital, &c.

A TREATISE ON DISEASES OF THE JOINTS. Illustrated with engravings on wood. In one very handsome octavo volume, of about 500 pages, extra cloth; $3 00.

At the outset we may state that the work is worthy of much praise, and bears evidence of much thoughtful and careful inquiry, and here and there of no slight originality. We have already carried this notice further than we intended to do, but not to the extent the work deserves. We can only add, that the perusal of it has afforded us great pleasure. The author has evidently worked very hard at his subject, and his investigations into the Physiology and Pathology of Joints have been carried on in a manner which entitles him to be listened to with attention and respect. We must not omit to mention the very admirable plates with which the volume is enriched. We seldom meet with such striking and faithful delineations of disease.—*London Med. Times and Gazette*, Feb. 9, 1861.

This volume will be welcomed, as the record of much honest research and careful investigation into the nature and treatment of a most important class of disorders. We cannot conclude this notice of a valuable and useful book without calling attention to the amount of *bona fide* work it contains. It is no slight matter for a volume to show laborious investigation, and at the same time original thought, on the part of its author, whom we may congratulate on the successful completion of his arduous task.—*London Lancet*, March 9, 1861.

CARPENTER (WILLIAM B.), M. D., F. R. S., &c.,
Examiner in Physiology and Comparative Anatomy in the University of London.

THE MICROSCOPE AND ITS REVELATIONS. With an Appendix containing the Applications of the Microscope to Clinical Medicine, &c. By F. G. SMITH, M. D. Illustrated by four hundred and thirty-four beautiful engravings on wood. In one large and very handsome octavo volume, of 724 pages, extra cloth, $5 25.

The great importance of the microscope as a means of diagnosis, and the number of microscopists who are also physicians, have induced the American publishers, with the author's approval, to add an Appendix, carefully prepared by Professor Smith, on the applications of the instrument to clinical medicine, together with an account of American Microscopes, their modifications and accessories. This portion of the work is illustrated with nearly one hundred wood-cuts, and, it is hoped, will adapt the volume more particularly to the use of the American student.

Those who are acquainted with Dr. Carpenter's previous writings on Animal and Vegetable Physiology, will fully understand how vast a store of knowledge he is able to bring to bear upon so comprehensive a subject as the revelations of the microscope; and even those who have no previous acquaintance with the construction or uses of this instrument, will find abundance of information conveyed in clear and simple language.—*Med. Times and Gazette.*

The additions by Prof. Smith give it a positive claim upon the profession, for which we doubt not he will receive their sincere thanks. Indeed, we know not where the student of medicine will find such a complete and satisfactory collection of microscopic facts bearing upon physiology and practical medicine as is contained in Prof. Smith's appendix; and this of itself, it seems to us, is fully worth the cost of the volume.—*Louisville Medical Review.*

CARPENTER (WILLIAM B.), M. D., F. R. S.,

Examiner in Physiology and Comparative Anatomy in the University of London.

PRINCIPLES OF HUMAN PHYSIOLOGY; with their chief applications to

Psychology, Pathology, Therapeutics, Hygiene, and Forensic Medicine. A new American, from the last and revised London edition. With nearly three hundred illustrations. Edited, with additions, by FRANCIS GURNEY SMITH, M. D., Professor of the Institutes of Medicine in the Pennsylvania Medical College, &c. In one very large and beautiful octavo volume, of about nine hundred large pages, handsomely printed, extra cloth, $5 50.

For upwards of thirteen years Dr. Carpenter's work has been considered by the profession generally, both in this country and England, as the most valuable compendium on the subject of physiology in our language. This distinction it owes to the high attainments and unwearied industry of its accomplished author. The present edition (which, like the last American one, was prepared by the author himself), is the result of such extensive revision, that it may almost be considered a new work. We need hardly say, in concluding this brief notice, that while the work is indispensable to every student of medicine in this country, it will amply repay the practitioner for its perusal by the interest and value of its contents.—*Boston Med. and Surg. Journal.*

This is a standard work—the text-book used by all medical students who read the English language. It has passed through several editions in order to keep pace with the rapidly growing science of Physiology. Nothing need be said in its praise, for its merits are universally known; we have nothing to say of its defects, for they only appear where the science of which it treats is incomplete.—*Western Lancet.*

The most complete exposition of physiology which any language can at present give.—*Brit. and For. Med.-Chirurg. Review.*

The greatest, the most reliable, and the best book on the subject which we know of in the English language.—*Stethoscope.*

To eulogize this great work would be superfluous. We should observe, however, that in this edition the author has remodelled a large portion of the former, and the editor has added much matter of interest, especially in the form of illustrations. We may confidently recommend it as the most complete work on Human Physiology in our language.—*Southern Med. and Surg. Journal.*

The most complete work on the science in our language.—*Am. Med. Journal.*

The most complete work now extant in our language.—*N. O. Med. Register.*

The best text-book in the language on this extensive subject.—*London Med. Times.*

A complete cyclopædia of this branch of science.—*N. Y. Med. Times.*

The profession of this country, and perhaps also of Europe, have anxiously and for some time awaited the announcement of this new edition of Carpenter's Human Physiology. His former editions have for many years been almost the only text-book on Physiology in all our medical schools, and its circulation among the profession has been unsurpassed by any work in any department of medical science.

It is quite unnecessary for us to speak of this work as its merits would justify. The mere announcement of its appearance will afford the highest pleasure to every student of Physiology, while its perusal will be of infinite service in advancing physiological science.—*Ohio Med. and Surg. Journ.*

BY THE SAME AUTHOR.

ELEMENTS (OR MANUAL) OF PHYSIOLOGY, INCLUDING PHYSIOLOGICAL ANATOMY.

Second American, from a new and revised London edition. With one hundred and ninety illustrations. In one very handsome octavo volume, leather. pp. 566. $4 00.

In publishing the first edition of this work, its title was altered from that of the London volume, by the substitution of the word "Elements" for that of "Manual," and with the author's sanction the title of "Elements" is still retained as being more expressive of the scope of the treatise.

BY THE SAME AUTHOR.

PRINCIPLES OF COMPARATIVE PHYSIOLOGY.

New American, from the Fourth and Revised London edition. In one large and handsome octavo volume, with over three hundred beautiful illustrations. pp. 752. Extra cloth, $5 00.

This book should not only be read but thoroughly studied by every member of the profession. None are too wise or old, to be benefited thereby. But especially to the younger class would we cordially commend it as best fitted of any work in the English language to qualify them for the reception and comprehension of those truths which are daily being developed in physiology.—*Medical Counsellor.*

Without pretending to it, it is an encyclopedia of the subject, accurate and complete in all respects—a truthful reflection of the advanced state at which the science has now arrived.—*Dublin Quarterly Journal of Medical Science.*

A truly magnificent work—in itself a perfect physiological study.—*Ranking's Abstract.*

This work stands without its fellow. It is one few men in Europe could have undertaken; it is one no man, we believe, could have brought to so successful an issue as Dr. Carpenter. It required for its production a physiologist at once deeply read in the labors of others, capable of taking a general, critical, and unprejudiced view of those labors, and of combining the varied, heterogeneous materials at his disposal, so as to form an harmonious whole. We feel that this abstract can give the reader a very imperfect idea of the fulness of this work, and no idea of its unity, of the admirable manner in which material has been brought, from the most various sources, to conduce to its completeness, of the lucidity of the reasoning it contains, or of the clearness of language in which the whole is clothed. Not the profession only, but the scientific world at large, must feel deeply indebted to Dr. Carpenter for this great work. It must, indeed, add largely even to his high reputation.—*Medical Times.*

BY THE SAME AUTHOR. (*Preparing.*)

PRINCIPLES OF GENERAL PHYSIOLOGY, INCLUDING ORGANIC CHEMISTRY AND HISTOLOGY.

With a General Sketch of the Vegetable and Animal Kingdom. In one large and very handsome octavo volume, with several hundred illustrations.

BY THE SAME AUTHOR.

A PRIZE ESSAY ON THE USE OF ALCOHOLIC LIQUORS IN HEALTH AND DISEASE.

New edition, with a Preface by D. F. CONDIE, M. D., and explanations of scientific words. In one neat 12mo. volume, extra cloth. pp. 178. 50 cents.

CONDIE (D. F.), M. D., &c.

A PRACTICAL TREATISE ON THE DISEASES OF CHILDREN. Fifth

edition, revised and augmented. In one large volume, 8vo., extra cloth, of over 750 pages. $4 50.

In presenting a new and revised edition of this favorite work, the publishers have only to state that the author has endeavored to render it in every respect "a complete and faithful exposition of the pathology and therapeutics of the maladies incident to the earlier stages of existence—a full and exact account of the diseases of infancy and childhood." To accomplish this he has subjected the whole work to a careful and thorough revision, rewriting a considerable portion, and adding several new chapters. In this manner it is hoped that any deficiencies which may have previously existed have been supplied, that the recent labors of practitioners and observers have been thoroughly incorporated, and that in every point the work will be found to maintain the high reputation it has enjoyed as a complete and thoroughly practical book of reference in infantile affections.

A few notices of previous editions are subjoined.

Dr. Condie's scholarship, acumen, industry, and practical sense are manifested in this, as in all his numerous contributions to science.—*Dr. Holmes's Report to the American Medical Association.*

Taken as a whole, in our judgment, Dr. Condie's Treatise is the one from the perusal of which the practitioner in this country will rise with the greatest satisfaction.—*Western Journal of Medicine and Surgery.*

One of the best works upon the Diseases of Children in the English language.—*Western Lancet.*

We feel assured from actual experience that no physician's library can be complete without a copy of this work.—*N. Y. Journal of Medicine.*

A veritable pædiatric encyclopædia, and an honor to American medical literature.—*Ohio Medical and Surgical Journal.*

We feel persuaded that the American medical profession will soon regard it not only as a very good, but as the VERY BEST "Practical Treatise on the Diseases of Children."—*American Medical Journal.*

In the department of infantile therapeutics, the work of Dr. Condie is considered one of the best which has been published in the English language.—*The Stethoscope.*

We pronounced the first edition to be the best work on the diseases of children in the English language, and, notwithstanding all that has been published, we still regard it in that light.—*Medical Examiner.*

The value of works by native authors on the diseases which the physician is called upon to combat, will be appreciated by all; and the work of Dr. Condie has gained for itself the character of a safe guide for students, and a useful work for consultation by those engaged in practice.—*N. Y. Med. Times.*

This is the fourth edition of this deservedly popular treatise. During the interval since the last edition, it has been subjected to a thorough revision by the author; and all new observations in the pathology and therapeutics of children have been included in the present volume. As we said before, we do not know of a better book on diseases of children, and to a large part of its recommendations we yield an unhesitating concurrence.—*Buffalo Med. Journal.*

Perhaps the most full and complete work now before the profession of the United States; indeed, we may say in the English language. It is vastly superior to most of its predecessors.—*Transylvania Med. Journal*

CHRISTISON (ROBERT), M. D., V. P. R. S. E., &c.

A DISPENSATORY; or, Commentary on the Pharmacopœias of Great Britain

and the United States; comprising the Natural History, Description, Chemistry, Pharmacy, Actions, Uses, and Doses of the Articles of the Materia Medica. Second edition, revised and improved, with a Supplement containing the most important New Remedies. With copious Additions, and two hundred and thirteen large wood-engravings. By R. EGLESFELD GRIFFITH, M. D. In one very large and handsome octavo volume, extra cloth, of over 1000 pages. $4 00.

COOPER (BRANSBY B.), F. R. S.

LECTURES ON THE PRINCIPLES AND PRACTICE OF SURGERY.

In one very large octavo volume, extra cloth, of 750 pages. $2 00.

COOPER ON THE ANATOMY AND DISEASES OF THE BREAST, with twenty-five Miscellaneous and Surgical Papers. One large volume, imperial 8vo., extra cloth, with 252 figures, on 36 plates. $3 00.

COOPER ON THE STRUCTURE AND DISEASES OF THE TESTIS, AND ON THE THYMUS GLAND. One vol. imperial 8vo., extra cloth, with 177 figures on 29 plates. $2 50.

CLYMER ON FEVERS; THEIR DIAGNOSIS, PATHOLOGY, AND TREATMENT. In one octavo volume, leather, of 600 pages. $1 75.

COLOMBAT DE L'ISERE ON THE DISEASES OF FEMALES, and on the special Hygiene of their Sex. Translated, with many Notes and Additions, by C. D. MEIGS, M. D. Second edition, revised and improved. In one large volume, octavo, leather, with numerous wood-cuts. pp. 720. $3 75.

CARSON (JOSEPH), M. D.,

Professor of Materia Medica and Pharmacy in the University of Pennsylvania.

SYNOPSIS OF THE COURSE OF LECTURES ON MATERIA MEDICA

AND PHARMACY, delivered in the University of Pennsylvania. With three Lectures on the Modus Operandi of Medicines. Third edition, revised. In one handsome octavo volume. $2 50.

CURLING (T. B.), F. R. S.,

Surgeon to the London Hospital, President of the Hunterian Society, &c.

A PRACTICAL TREATISE ON DISEASES OF THE TESTIS, SPERMA-

TIC CORD, AND SCROTUM. Second American, from the second and enlarged English edition. In one handsome octavo volume, extra cloth, with numerous illustrations. pp. 490. $2 00

CHURCHILL (FLEETWOOD), M. D., M. R. I. A.

ON THE THEORY AND PRACTICE OF MIDWIFERY. A new American from the fourth revised and enlarged London edition. With Notes and Additions, by D. Francis Condie, M. D., author of a "Practical Treatise on the Diseases of Children," &c. With 194 illustrations. In one very handsome octavo volume, of nearly 700 large pages, extra cloth, $4 00.

This work has been so long an established favorite, both as a text-book for the learner and as a reliable aid in consultation for the practitioner, that in presenting a new edition it is only necessary to call attention to the very extended improvements which it has received. Having had the benefit of two revisions by the author since the last American reprint, it has been materially enlarged, and Dr. Churchill's well-known conscientious industry is a guarantee that every portion has been thoroughly brought up with the latest results of European investigation in all departments of the science and art of obstetrics. The recent date of the last Dublin edition has not left much of novelty for the American editor to introduce, but he has endeavored to insert whatever has since appeared, together with such matters as his experience has shown him would be desirable for the American student, including a large number of illustrations. With the sanction of the author he has added in the form of an appendix, some chapters from a little "Manual for Midwives and Nurses," recently issued by Dr. Churchill, believing that the details there presented can hardly fail to prove of advantage to the junior practitioner. The result of all these additions is that the work now contains fully one-half more matter than the last American edition, with nearly one-half more illustrations, so that notwithstanding the use of a smaller type, the volume contains almost two hundred pages more than before.

No effort has been spared to secure an improvement in the mechanical execution of the work equal to that which the text has received, and the volume is confidently presented as one of the handsomest that has thus far been laid before the American profession; while the very low price at which it is offered should secure for it a place in every lecture-room and on every office table.

A better book in which to learn these important points we have not met than Dr. Churchill's. Every page of it is full of instruction; the opinion of all writers of authority is given on questions of difficulty, as well as the directions and advice of the learned author himself, to which he adds the result of statistical inquiry, putting statistics in their proper place and giving them their due weight, and no more. We have never read a book more free from professional jealousy than Dr. Churchill's. It appears to be written with the true design of a book on medicine, viz: to give all that is known on the subject of which he treats, both theoretically and practically, and to advance such opinions of his own as he believes will benefit medical science, and insure the safety of the patient. We have said enough to convey to the profession that this book of Dr. Churchill's is admirably suited for a book of reference for the practitioner, as well as a text-book for the student, and we hope it may be extensively purchased amongst our readers. To them we most strongly recommend it.—*Dublin Medical Press.*

To bestow praise on a book that has received such marked approbation would be superfluous. We need only say, therefore, that if the first edition was thought worthy of a favorable reception by the medical public, we can confidently affirm that this will be found much more so. The lecturer, the practitioner, and the student, may all have recourse to its pages, and derive from their perusal much interest and instruction in everything relating to theoretical and practical midwifery.—*Dublin Quarterly Journal of Medical Science.*

A work of very great merit, and such as we can confidently recommend to the study of every obstetric practitioner.—*London Medical Gazette.*

Few treatises will be found better adapted as a text-book for the student, or as a manual for the frequent consultation of the young practitioner.—*American Medical Journal.*

Were we reduced to the necessity of having but one work on midwifery, and *permitted to choose*, we would unhesitatingly take Churchill.—*Western Med. and Surg. Journal.*

It is impossible to conceive a more useful and elegant manual than Dr. Churchill's Practice of Midwifery.—*Provincial Medical Journal.*

Certainly, in our opinion, the very best work on the subject which exists.—*N. Y. Annalist.*

No work holds a higher position, or is more deserving of being placed in the hands of the tyro, the advanced student, or the practitioner.—*Medical Examiner.*

Previous editions have been received with marked favor, and they deserved it; but this, reprinted from a very late Dublin edition, carefully revised and brought up by the author to the present time, does present an unusually accurate and able exposition of every important particular embraced in the department of midwifery. * * The clearness, directness, and precision of its teachings, together with the great amount of statistical research which its text exhibits, have served to place it already in the foremost rank of works in this department of medical science.—*N. O. Med. and Surg. Journal.*

In our opinion, it forms one of the best if not the very best text-book and epitome of obstetric science which we at present possess in the English language.—*Monthly Journal of Medical Science.*

The clearness and precision of style in which it is written, and the great amount of statistical research which it contains, have served to place it in the first rank of works in this department of medical science.—*N. Y. Journal of Medicine.*

This is certainly the most perfect system extant. It is the best adapted for the purposes of a text-book, and that which he whose necessities confine him to one book, should select in preference to all others.—*Southern Medical and Surgical Journal.*

BY THE SAME AUTHOR.

ON THE DISEASES OF INFANTS AND CHILDREN. Second American Edition, revised and enlarged by the author. Edited, with Notes, by W. V. Keating, M. D. In one large and handsome volume, extra cloth, of over 700 pages. $4 50.

In preparing this work a second time for the American profession, the author has spared no labor in giving it a very thorough revision, introducing several new chapters, and rewriting others, while every portion of the volume has been subjected to a severe scrutiny. The efforts of the American editor have been directed to supplying such information relative to matters peculiar to this country as might have escaped the attention of the author, and the whole may, therefore, be safely pronounced one of the most complete works on the subject accessible to the American Profession. By an alteration in the size of the page, these very extensive additions have been accommodated without unduly increasing the size of the work.

BY THE SAME AUTHOR.

ESSAYS ON THE PUERPERAL FEVER, AND OTHER DISEASES PECULIAR TO WOMEN. Selected from the writings of British Authors previous to the close of the Eighteenth Century. In one neat octavo volume, extra cloth, of about 450 pages. $2 50.

CHURCHILL (FLEETWOOD), M. D., M. R. I. A., &c.

ON THE DISEASES OF WOMEN; including those of Pregnancy and Childbed. A new American edition, revised by the Author. With Notes and Additions, by D. FRANCIS CONDIE, M. D., author of "A Practical Treatise on the Diseases of Children." With numerous illustrations. In one large and handsome octavo volume, extra cloth, of 768 pages. $4 00.

This edition of Dr. Churchill's very popular treatise may almost be termed a new work, so thoroughly has he revised it in every portion. It will be found greatly enlarged, and completely brought up to the most recent condition of the subject, while the very handsome series of illustrations introduced, representing such pathological conditions as can be accurately portrayed, present a novel feature, and afford valuable assistance to the young practitioner. Such additions as appeared desirable for the American student have been made by the editor, Dr. Condie, while a marked improvement in the mechanical execution keeps pace with the advance in all other respects which the volume has undergone, while the price has been kept at the former very moderate rate.

It comprises, unquestionably, one of the most exact and comprehensive expositions of the present state of medical knowledge in respect to the diseases of women that has yet been published.—*Am. Journ. Med. Sciences.*

This work is the most reliable which we possess on this subject; and is deservedly popular with the profession.—*Charleston Med. Journal*, July, 1857.

We know of no author who deserves that approbation, on "the diseases of females," to the same extent that Dr. Churchill does. His, indeed, is the only thorough treatise we know of on the subject; and it may be commended to practitioners and students as a masterpiece in its particular department.—*The Western Journal of Medicine and Surgery.*

As a comprehensive manual for students, or a work of reference for practitioners, it surpasses any other that has ever issued on the same subject from the British press.—*Dublin Quart. Journal.*

DICKSON (S. H.), M. D.,

Professor of Practice of Medicine in the Jefferson Medical College, Philadelphia.

ELEMENTS OF MEDICINE; a Compendious View of Pathology and Therapeutics, or the History and Treatment of Diseases. Second edition, revised. In one large and handsome octavo volume, of 750 pages, extra cloth. $4 00.

The steady demand which has so soon exhausted the first edition of this work, sufficiently shows that the author was not mistaken in supposing that a volume of this character was needed—an elementary manual of practice, which should present the leading principles of medicine with the practical results, in a condensed and perspicuous manner. Disencumbered of unnecessary detail and fruitless speculations, it embodies what is most requisite for the student to learn, and at the same time what the active practitioner wants when obliged, in the daily calls of his profession, to refresh his memory on special points. The clear and attractive style of the author renders the whole easy of comprehension, while his long experience gives to his teachings an authority everywhere acknowledged. Few physicians, indeed, have had wider opportunities for observation and experience, and few, perhaps, have used them to better purpose. As the result of a long life devoted to study and practice, the present edition, revised and brought up to the date of publication, will doubtless maintain the reputation already acquired as a condensed and convenient American text-book on the Practice of Medicine.

DRUITT (ROBERT), M. R. C. S., &c.

THE PRINCIPLES AND PRACTICE OF MODERN SURGERY. A new and revised American from the eighth enlarged and improved London edition. Illustrated with four hundred and thirty-two wood-engravings. In one very handsomely printed octavo volume of nearly 700 large pages, extra cloth, $4 00.

A work which like DRUITT'S SURGERY has for so many years maintained the position of a leading favorite with all classes of the profession, needs no special recommendation to attract attention to a revised edition. It is only necessary to state that the author has spared no pains to keep the work up to its well earned reputation of presenting in a small and convenient compass the latest condition of every department of surgery, considered both as a science and as an art; and that the services of a competent American editor have been employed to introduce whatever novelties may have escaped the author's attention, or may prove of service to the American practitioner. As several editions have appeared in London since the issue of the last American reprint, the volume has had the benefit of repeated revisions by the author, resulting in a very thorough alteration and improvement. The extent of these additions may be estimated from the fact that it now contains about one-third more matter than the previous American edition, and that notwithstanding the adoption of a smaller type, the pages have been increased by about one hundred, while nearly two hundred and fifty wood-cuts have been added to the former list of illustrations.

A marked improvement will also be perceived in the mechanical and artistical execution of the work, which, printed in the best style, on new type, and fine paper, leaves little to be desired as regards external finish; while at the very low price affixed it will be found one of the cheapest volumes accessible to the profession.

This popular volume, now a most comprehensive work on surgery, has undergone many corrections, improvements, and additions, and the principles and the practice of the art have been brought down to the latest record and observation. Of the operations in surgery it is impossible to speak too highly. The descriptions are so clear and concise, and the illustrations so accurate and numerous, that the student can have no difficulty, with instrument in hand, and book by his side, over the dead body, in obtaining a proper knowledge and sufficient tact in this much neglected department of medical education.—*British and Foreign Medico-Chirurg. Review*, Jan. 1860.

In the present edition the author has entirely rewritten many of the chapters, and has incorporated the various improvements and additions in modern surgery. On carefully going over it, we find that nothing of real practical importance has been omitted; it presents a faithful epitome of everything relating to surgery up to the present hour. It is deservedly a popular manual, both with the student and practitioner.—*London Lancet*, Nov. 19, 1859.

In closing this brief notice, we recommend as cordially as ever this most useful and comprehensive hand-book. It must prove a vast assistance, not only to the student of surgery, but also to the busy practitioner who may not have the leisure to devote himself to the study of more lengthy volumes.—*London Med. Times and Gazette*, Oct. 22, 1859.

In a word, this eighth edition of Dr. Druitt's Manual of Surgery is all that the surgical student or practitioner could desire.—*Dublin Quarterly Journal of Med. Sciences*, Nov. 1859.

DALTON, JR. (J. C.), M. D.

Professor of Physiology in the College of Physicians, New York.

A TREATISE ON HUMAN PHYSIOLOGY, designed for the use of Students and Practitioners of Medicine. Third edition, revised, with nearly three hundred illustrations on wood. In one very beautiful octavo volume, of 700 pages, extra cloth, $5 25. (*Just Issued.*)

The rapid demand for another edition of this work sufficiently shows that the author has succeeded in his efforts to produce a text-book of standard and permanent value, embodying within a moderate compass all that is definitely and positively known within the domain of Human Physiology. His high reputation as an original observer and investigator, is a guarantee that in again revising it he has introduced whatever is necessary to render it thoroughly on a level with the advanced science of the day, and this has been accomplished without unduly increasing the size of the volume.

No exertion has been spared to maintain the high standard of typographical execution which has rendered this work admittedly one of the handsomest volumes as yet produced in this country.

It will be seen, therefore, that Dr. Dalton's best efforts have been directed towards perfecting his work. The additions are marked by the same features which characterize the remainder of the volume, and render it by far the most desirable text-book on physiology to place in the hands of the student which, so far as we are aware, exists in the English language, or perhaps in any other. We therefore have no hesitation in recommending Dr. Dalton's book for the classes for which it is intended, satisfied as we are that it is better adapted to their use than any other work of the kind to which they have access.—*American Journal of the Med. Sciences*, April, 1861.

It is, therefore, no disparagement to the many books upon physiology, most excellent in their day, to say that Dalton's is the only one that gives us the science as it was known to the best philosophers throughout the world, at the beginning of the current year. It states in comprehensive but concise diction, the facts established by experiment, or other method of demonstration, and details, in an understandable manner, how it is done, but abstains from the discussion of unsettled or theoretical points. Herein it is unique; and these characteristics render it a text-book without a rival, for those who desire to study physiological science as it is known to its most successful cultivators. And it is physiology thus presented that lies at the foundation of correct pathological knowledge; and this in turn is the basis of rational therapeutics; so that pathology, in fact, becomes of prime importance in the proper discharge of our every-day practical duties. —*Cincinnati Lancet*, May, 1861.

Dr. Dalton needs no word of praise from us. He is universally recognized as among the first, if not the very first, of American physiologists now living. The first edition of his admirable work appeared but two years since, and the advance of science, his own original views and experiments, together with a desire to supply what he considered some deficiencies in the first edition, have already made the present one a necessity, and it will no doubt be even more eagerly sought for than the first. That it is not merely a reprint, will be seen from the author's statement of the following principal additions and alterations which he has made. The present, like the first edition, is printed in the highest style of the printer's art, and the illustrations are truly admirable for their clearness in expressing exactly what their author intended.—*Boston Medical and Surgical Journal*, March 28, 1861.

It is unnecessary to give a detail of the additions; suffice it to say, that they are numerous and important, and such as will render the work still more valuable and acceptable to the profession as a learned and original treatise on this all-important branch of medicine. All that was said in commendation of the getting up of the first edition, and the superior style of the illustrations apply with equal force to this. No better work on physiology can be placed in the hand of the student.—*St. Louis Medical and Surgical Journal*, May, 1861.

These additions, while testifying to the learning and industry of the author, render the book exceedingly useful, as the most complete exposé of a science, of which Dr. Dalton is doubtless the ablest representative on this side of the Atlantic.—*New Orleans Med. Times*, May, 1861.

A second edition of this deservedly popular work having been called for in the short space of two years, the author has supplied deficiencies, which existed in the former volume, and has thus more completely fulfilled his design of presenting to the profession a reliable and precise text-book, and one which we consider the best outline on the subject of which it treats, in any language.—*N. American Medico-Chirurg. Review*, May, 1861.

DUNGLISON, FORBES, TWEEDIE, AND CONOLLY.

THE CYCLOPÆDIA OF PRACTICAL MEDICINE: comprising Treatises on the Nature and Treatment of Diseases, Materia Medica, and Therapeutics, Diseases of Women and Children, Medical Jurisprudence, &c. &c. In four large super-royal octavo volumes, of 3254 double-columned pages, strongly and handsomely bound, with raised bands. $15 00.

***** This work contains no less than four hundred and eighteen distinct treatises, contributed by sixty-eight distinguished physicians, rendering it a complete library of reference for the country practitioner.**

The most complete work on Practical Medicine extant; or, at least, in our language.—*Buffalo Medical and Surgical Journal.*

For reference, it is above all price to every practitioner.—*Western Lancet.*

One of the most valuable medical publications of the day—as a work of reference it is invaluable.—*Western Journal of Medicine and Surgery.*

It has been to us, both as learner and teacher, a work for ready and frequent reference, one in which modern English medicine is exhibited in the most advantageous light.—*Medical Examiner.*

The editors are practitioners of established reputation, and the list of contributors embraces many of the most eminent professors and teachers of London, Edinburgh, Dublin, and Glasgow. It is, indeed, the great merit of this work that the principal articles have been furnished by practitioners who have not only devoted especial attention to the diseases about which they have written, but have also enjoyed opportunities for an extensive practical acquaintance with them and whose reputation carries the assurance of their competency justly to appreciate the opinions of others, while it stamps their own doctrines with high and just authority.—*American Medical Journal.*

DEWEES'S COMPREHENSIVE SYSTEM OF MIDWIFERY. Illustrated by occasional cases and many engravings. Twelfth edition, with the author's last improvements and corrections. In one octavo volume, extra cloth, of 600 pages $3 50.

DEWEES'S TREATISE ON THE PHYSICAL AND MEDICAL TREATMENT OF CHILDREN. The last edition. In one volume, octavo, extra cloth, 548 pages. $2 50

DEWEES'S TREATISE ON THE DISEASES OF FEMALES. Tenth edition. In one volume, octavo extra cloth, 532 pages, with plates. $3 00.

DUNGLISON (ROBLEY), M. D.,

Professor of Institutes of Medicine in the Jefferson Medical College, Philadelphia.

ENLARGED AND REVISED EDITION OF 1865.—(Just Issued.)

MEDICAL LEXICON; a Dictionary of Medical Science, containing a concise Explanation of the various Subjects and Terms of Anatomy, Physiology, Pathology, Hygiene, Therapeutics Pharmacology, Pharmacy, Surgery, Obstetrics, Medical Jurisprudence, and Dentistry. Notices of Climate and of Mineral Waters; Formulæ for Officinal, Empirical, and Dietetic Preparations; with the Accentuation and Etymology of the Terms, and the French and other Synonymes; so as to constitute a French as well as English Medical Lexicon. Thoroughly revised and very greatly modified and augmented. In one very large and handsome royal octavo volume, of 1048 double-columned pages, in small type; strongly done up in extra cloth, $6 00; leather, raised bands, $6 75.

PREFACE TO THE NEW EDITION.

"The author has again been required to subject his Medical Lexicon to a thorough revision. The progress of Medical Science, and the consequent introduction of new subjects and terms, demanded this; and he has embraced the occasion to render more complete the etymology and accentuation of the terms. On no previous revision has so much time and labor been expended by him. Some idea may be formed of this, from the fact, that although the page has been augmented in all its dimensions, not fewer than between sixty and seventy pages have been added.

"As the author has remarked on former occasions, it has ever been his ardent wish to make the work a satisfactory and desirable—if not indispensable—lexicon, in which the inquirer may search, without disappointment, for every term that has been legitimated in the nomenclature of the science; and he confidently presents this edition as having more claims on the attention of the practitioner and student than its predecessors.

"Once more the author gladly seizes the opportunity afforded him to express his grateful acknowledgments for the vast amount of favor which has been extended to the Dictionary."

January, 1865.

The object of the author from the outset has not been to make the work a mere lexicon or dictionary of terms, but to afford, under each a condensed view of its various medical relations, and thus to render the work an epitome of the existing condition of medical science. Starting with this view, the immense demand which has existed for the work has enabled him, in repeated revisions, to augment its completeness and usefulness, until at length it has attained the position of a recognized and standard authority wherever the language is spoken. This has only been accomplished by the earnest determination to bring each successive edition thoroughly on a level with the most advanced condition of contemporary medical science, and on no previous occasion has this demanded a more patient and laborious effort than in rendering the present edition fully equal to the wants of the student of the present day, and in no previous editions has the amount of new matter introduced been so large. While, therefore, the reader who merely desires a vocabulary explaining the terms in common use can satisfy himself with the smaller works, such as Hoblyn's, the student and practitioner who wish a work to which they can at all times refer with unfailing confidence for all which it is the province of such a book to supply, must still, as heretofore, keep the latest edition of "DUNGLISON'S DICTIONARY" within reach.

The mechanical execution of this edition will be found greatly superior to that of previous impressions. By enlarging the size of the volume to a royal octavo, and by the employment of a small but clear type on extra fine paper, the additions have been incorporated without materially increasing the bulk of the volume, and the matter of two or three ordinary octavos has been compressed into the space of one not unhandy for consultation and reference.

A few notices of the previous editions are subjoined.

This work, the appearance of the fifteenth edition of which it has become our duty and pleasure to announce, is perhaps the most stupendous monument of labor and erudition in medical literature. One would hardly suppose after constant use of the preceding editions, where we have never failed to find a sufficiently full explanation of every medical term, that in this edition "*about six thousand subjects and terms have been added*," with a careful revision and correction of the entire work. It is only necessary to announce the advent of this edition to make it occupy the place of the preceding one on the table of every medical man, as it is without doubt the best and most comprehensive work of the kind which has ever appeared.—*Buffalo Med. Journ.*, Jan. 1858.

The work is a monument of patient research, skilful judgment, and vast physical labor, that will perpetuate the name of the author more effectually than any possible device of stone or metal. Dr. Dunglison deserves the thanks not only of the American profession, but of the whole medical world.—*North Am. Medico-Chir. Review*, Jan. 1858.

A Medical Dictionary better adapted for the wants of the profession than any other with which we are acquainted, and of a character which places it far above comparison and competition.—*Am. Journ. Med. Sciences*, Jan. 1858.

We need only say, that the addition of 6,000 new terms, with their accompanying definitions, may be said to constitute a new work, by itself. We have examined the Dictionary attentively, and are most happy to pronounce it unrivalled of its kind. The erudition displayed, and the extraordinary industry which must have been demanded, in its preparation and perfection, redound to the lasting credit of its author, and have furnished us with a volume *indispensable* at the present day, to all who would find themselves *au niveau* with the highest standards of medical information.—*Boston Medical and Surgical Journal*, Dec. 31, 1857.

Good lexicons and encyclopedic works generally, are the most labor-saving contrivances which literary men enjoy; and the labor which is required to produce them in the perfect manner of this example is something appalling to contemplate. The author tells us in his preface that he has added about six thousand terms and subjects to this edition, which, before, was considered universally as the best work of the kind in any language.—*Silliman's Journal*, March, 1858.

A complete and thorough exponent of medical terminology, without rival or possibility of rivalry.—*Nashville Journ. of Med. and Surg.*, Jan. 1858.

It is universally acknowledged, we believe, that this work is incomparably the best and most complete Medical Lexicon in the English language. Comment and commendation are unnecessary, as no one at the present day thinks of purchasing any other Medical Dictionary than this.—*St. Louis Med. and Surg. Journ.*, Jan 1858.

It is the foundation stone of a good medical library, and should always be included in the first list of books purchased by the medical student.—*Am. Med. Monthly*, Jan. 1858.

It is scarcely necessary to remark that any medical library wanting a copy of Dunglison's Lexicon must be imperfect.—*Cin. Lancet*, Jan. 1858.

The present edition we may safely say has no equal in the world.—*Peninsular Med. Journal*, Jan. 1858.

DUNGLISON (ROBLEY), M. D.,

Professor of Institutes of Medicine in the Jefferson Medical College, Philadelphia.

HUMAN PHYSIOLOGY. Eighth edition. Thoroughly revised and extensively modified and enlarged, with five hundred and thirty-two illustrations. In two large and handsomely printed octavo volumes, extra cloth, of about 1500 pages. $7 00.

In revising this work for its eighth appearance, the author has spared no labor to render it worthy a continuance of the very great favor which has been extended to it by the profession. The whole contents have been rearranged, and to a great extent remodelled; the investigations which of late years have been so numerous and so important, have been carefully examined and incorporated, and the work in every respect has been brought up to a level with the present state of the subject. The object of the author has been to render it a concise but comprehensive treatise, containing the whole body of physiological science, to which the student and man of science can at all times refer with the certainty of finding whatever they are in search of, fully presented in all its aspects; and on no former edition has the author bestowed more labor to secure this result.

We believe that it can truly be said, no more complete repertory of facts upon the subject treated, can anywhere be found. The author has, moreover, that enviable tact at description and that facility and ease of expression which render him peculiarly acceptable to the casual, or the studious reader. This faculty, so requisite in setting forth many graver and less attractive subjects, lends additional charms to one always fascinating.—*Boston Med. and Surg. Journal.*

The most complete and satisfactory system of Physiology in the English language.—*Amer. Med. Journal.*

The best work of the kind in the English language.—*Silliman's Journal.*

The present edition the author has made a perfect mirror of the science as it is at the present hour. As a work upon physiology proper, the science of the functions performed by the body, the student will find it all he wishes.—*Nashville Journ. of Med.*

That he has succeeded, most admirably succeeded in his purpose, is apparent from the appearance of an eighth edition. It is now the great encyclopædia on the subject, and worthy of a place in every physician's library.—*Western Lancet.*

BY THE SAME AUTHOR.

GENERAL THERAPEUTICS AND MATERIA MEDICA; adapted for a Medical Text-book. With Indexes of Remedies and of Diseases and their Remedies. SIXTH EDITION, revised and improved. With one hundred and ninety-three illustrations. In two large and handsomely printed octavo vols., extra cloth, of about 1100 pages. $6 50.

In announcing a new edition of Dr. Dunglison's General Therapeutics and Materia Medica, we have no words of commendation to bestow upon a work whose merits have been heretofore so often and so justly extolled. It must not be supposed, however, that the present is a mere reprint of the previous edition; the character of the author for laborious research, judicious analysis, and clearness of expression, is fully sustained by the numerous additions he has made to the work, and the careful revision to which he has subjected the whole.—*N. A. Medico-Chir. Review*, Jan. 1858.

The work will, we have little doubt, be bought and read by the majority of medical students; its size, arrangement, and reliability recommend it to all; no one, we venture to predict, will study it without profit, and there are few to whom it will not be in some measure useful as a work of reference. The young practitioner, more especially, will find the copious indexes appended to this edition of great assistance in the selection and preparation of suitable formulæ.—*Charleston Med. Journ. and Review*, Jan. 1858.

BY THE SAME AUTHOR.

NEW REMEDIES, WITH FORMULÆ FOR THEIR PREPARATION AND ADMINISTRATION. Seventh edition, with extensive Additions. In one very large octavo volume, extra cloth, of 770 pages. $4 00.

One of the most useful of the author's works.—*Southern Medical and Surgical Journal.*

This elaborate and useful volume should be found in every medical library, for as a book of reference, for physicians, it is unsurpassed by any other work in existence, and the double index for diseases and for remedies, will be found greatly to enhance its value.—*New York Med. Gazette.*

The great learning of the author, and his remarkable industry in pushing his researches into every source whence information is derivable, have enabled him to throw together an extensive mass of facts and statements, accompanied by full reference to authorities; which last feature renders the work practically valuable to investigators who desire to examine the original papers.—*The American Journal of Pharmacy.*

ELLIS (BENJAMIN), M. D.

THE MEDICAL FORMULARY: being a Collection of Prescriptions, derived from the writings and practice of many of the most eminent physicians of America and Europe. Together with the usual Dietetic Preparations and Antidotes for Poisons. To which is added an Appendix, on the Endermic use of Medicines, and on the use of Ether and Chloroform. The whole accompanied with a few brief Pharmaceutic and Medical Observations. Eleventh edition, carefully revised and much extended by ROBERT P. THOMAS, M. D., Professor of Materia Medica in the Philadelphia College of Pharmacy. In one volume, 8vo., of about 350 pages. $3 00. (*Just Issued.*)

On no previous edition of this work has there been so complete and thorough a revision. The extensive changes in the new United States Pharmacopœia have necessitated corresponding alterations in the Formulary, to conform to that national standard, while the progress made in the materia medica and the arts of prescribing and dispensing during the last ten years have been carefully noted and incorporated throughout. It is therefore presented as not only worthy a continuance of the favor so long enjoyed, but as more valuable than ever to the practitioner and pharmaceutist. Those who possess previous editions will find the additional matter of sufficient importance to warrant their adding the present to their libraries.

ERICHSEN (JOHN),

Professor of Surgery in University College, London, &c.

THE SCIENCE AND ART OF SURGERY; BEING A TREATISE ON SURGICAL INJURIES, DISEASES, AND OPERATIONS.

New and improved American, from the second enlarged and carefully revised London edition. Illustrated with over four hundred engravings on wood. In one large and handsome octavo volume, of one thousand closely printed pages, extra cloth, $4 00.

The very distinguished favor with which this work has been received on both sides of the Atlantic has stimulated the author to render it even more worthy of the position which it has so rapidly attained as a standard authority. Every portion has been carefully revised, numerous additions have been made, and the most watchful care has been exercised to render it a complete exponent of the most advanced condition of surgical science. In this manner the work has been enlarged by about a hundred pages, while the series of engravings has been increased by more than a hundred, rendering it one of the most thoroughly illustrated volumes before the profession. The additions of the author having rendered unnecessary most of the notes of the former American editor, but little has been added in this country; some few notes and occasional illustrations have, however, been introduced to elucidate American modes of practice.

It is, in our humble judgment, decidedly the best book of the kind in the English language. Strange that just such books are notoftener produced by public teachers of surgery in this country and Great Britain. Indeed, it is a matter of great astonishment, but no less true than astonishing, that of the many works on surgery republished in this country within the last fifteen or twenty years as text-books for medical students, this is the only one that even approximates to the fulfilment of the peculiar wants of young men just entering upon the study of this branch of the profession.—*Western Jour. of Med. and Surgery.*

Its value is greatly enhanced by a very copious well-arranged index. We regard this as one of the most valuable contributions to modern surgery. To one entering his novitiate of practice, we regard it the most serviceable guide which he can consult. He will find a fulness of detail in leading him through every step of the operation, and not deserting him until the final issue of the case is decided.—*Stethoscope.*

Embracing, as will be perceived, the whole surgical domain, and each division of itself almost complete and perfect, each chapter full and explicit, each subject faithfully exhibited, we can only express our estimate of it in the aggregate. We consider it an excellent contribution to surgery, as probably the best single volume now extant on the subject, and with great pleasure we add it to our text-books.—*Nashville Journal of Medicine and Surgery.*

Prof. Erichsen's work, for its size, has not been surpassed; his nine hundred and eight pages, profusely illustrated, are rich in physiological, pathological, and operative suggestions, doctrines, details, and processes; and will prove a reliable resource for information, both to physician and surgeon, in the hour of peril.—*N. O. Med. and Surg. Journal.*

We may say, after a careful perusal of some of the chapters, and a more hasty examination of the remainder, that it must raise the character of the author, and reflect great credit upon the college to which he is professor, and we can cordially recommend it as a work of reference both to students and practitioners.—*Med. Times and Gazette.*

We do not hesitate to say that the volume before us gives a very admirable practical view of the science and art of Surgery of the present day, and we have no doubt that it will be highly valued as a surgical guide as well by the surgeon as by the student of surgery.—*Edinburgh Med. and Surg. Journal.*

FISKE FUND PRIZE ESSAYS.—THE EFFECTS OF CLIMATE ON TUBERCULOUS DISEASE. By EDWIN LEE, M.R.C.S., London, and THE INFLUENCE OF PREGNANCY ON THE DEVELOPMENT OF TUBERCLES By EDWARD WARREN, M.D., of Edenton, N.C. Together in one neat 8vo. volume, extra cloth. $1 00.

FRICK ON RENAL AFFECTIONS; their Diagnosis and Pathology. With illustrations. One volume, royal 12mo., extra cloth. 75 cents.

FERGUSSON (WILLIAM), F. R. S.,

Professor of Surgery in King's College, London, &c.

A SYSTEM OF PRACTICAL SURGERY.

Fourth American, from the third and enlarged London edition. In one large and beautifully printed octavo volume, of about 700 pages, with 393 handsome illustrations, leather. $4 00.

FOWNES (GEORGE), PH. D., &c.

A MANUAL OF ELEMENTARY CHEMISTRY; Theoretical and Practical.

With one hundred and ninety-seven illustrations. Edited by ROBERT BRIDGES, M. D. In one large royal 12mo. volume, of 600 pages, extra cloth, $2 00.

The death of the author having placed the editorial care of this work in the practised hands of Drs. Bence Jones and A. W. Hoffman, everything has been done in its revision which experience could suggest to keep it on a level with the rapid advance of chemical science. The additions requisite to this purpose have necessitated an enlargement of the page, notwithstanding which the work has been increased by about fifty pages. At the same time every care has been used to maintain its distinctive character as a condensed manual for the student, divested of all unnecessary detail or mere theoretical speculation. The additions have, of course, been mainly in the department of Organic Chemistry, which has made such rapid progress within the last few years, but yet equal attention has been bestowed on the other branches of the subject—Chemical Physics and Inorganic Chemistry—to present all investigations and discoveries of importance, and to keep up the reputation of the volume as a complete manual of the whole science, admirably adapted for the learner. By the use of a small but exceedingly clear type the matter of a large octavo is compressed within the convenient and portable limits of a moderate sized duodecimo, and at the very low price affixed, it is offered as one of the cheapest volumes before the profession.

Dr. Fownes' excellent work has been universally recognized everywhere in his own and this country, as the best elementary treatise on chemistry in the English tongue, and is very generally adopted, we believe, as the standard text-book in all our colleges, both literary and scientific.—*Charleston Med. Journ. and Review*

The work of Dr. Fownes has long been before the public, and its merits have been fully appreciated as the best text-book on chemistry now in existence. We do not, of course, place it in a rank superior to the works of Brande, Graham, Turner, Gregory, or Gmelin, but we say that, as a work for students, it is preferable to any of them.—*London Journal of Medicine.*

FLINT (AUSTIN), M. D.,

Professor of the Principles and Practice of Medicine in Bellevue Hosp. Med. College, New York.

Now Ready, 1866.

THE PRINCIPLES AND PRACTICE OF MEDICINE. For the use of Practitioners and Students. In one large and handsome octavo volume of over 850 closely printed pages, leather, raised bands, $7; handsome extra cloth, $6.

The want has for some time been felt in this country of a volume which, within a moderate compass, should give a clear and connected view of general and special pathology and therapeutics in their most modern aspect. Recent researches have modified many opinions which were formerly universally received on important points both of theory and practice, and these changes have perhaps as yet scarcely received the attention due to them in the works accessible to the profession. The author's reputation as a teacher is a guarantee that the present volume will be fully up to the most advanced state of the science of the day, while his long and varied experience as a practitioner will insure that in all practical details his work will be a sound and trustworthy guide.

BY THE SAME AUTHOR. *(Preparing.)*

PHYSICAL EXPLORATION AND DIAGNOSIS OF DISEASES AFFECTING THE RESPIRATORY ORGANS. Second edition. In one large and handsome octavo volume, extra cloth.

BY THE SAME AUTHOR.

A PRACTICAL TREATISE ON THE DIAGNOSIS, PATHOLOGY, AND TREATMENT OF DISEASES OF THE HEART. In one neat octavo volume, of about 500 pages, extra cloth. $3 50.

We do not know that Dr. Flint has written anything which is not first rate; but this, his latest contribution to medical literature, in our opinion, surpasses all the others. The work is most comprehensive in its scope, and most sound in the views it enunciates. The descriptions are clear and methodical; the statements are substantiated by facts, and are made with such simplicity and sincerity, that without them they would carry conviction. The style is admirably clear, direct, and free from dryness. With Dr. Walshe's excellent treatise before us, we have no hesitation in saying that Dr. Flint's book is the best work on the heart in the English language. —*Boston Med. and Surg. Journal.*

GRAHAM (THOMAS), F. R. S.

THE ELEMENTS OF INORGANIC CHEMISTRY, including the Applications of the Science in the Arts. New and much enlarged edition, by HENRY WATTS and ROBERT BRIDGES, M. D. Complete in one large and handsome octavo volume, of over 800 very large pages, with two hundred and thirty-two wood-cuts, extra cloth. $5 50.

*** Part II., completing the work from p. 431 to end, with Index, Title Matter, &c., may be had separate, cloth backs and paper sides. Price $3 00.

From Prof. E. N. Horsford, Harvard College.

It has, in its earlier and less perfect editions, been familiar to me, and the excellence of its plan and the clearness and completeness of its discussions, have long been my admiration.

No reader of English works on this science can afford to be without this edition of Prof. Graham's Elements.—*Silliman's Journal*, March, 1858.

From Prof. Wolcott Gibbs, N. Y. Free Academy

The work is an admirable one in all respects, and its republication here cannot fail to exert a positive influence upon the progress of science in this country.

GRIFFITH (ROBERT E.), M. D., &c.

A UNIVERSAL FORMULARY, containing the methods of Preparing and Administering Officinal and other Medicines. The whole adapted to Physicians and Pharmaceutists. SECOND EDITION, thoroughly revised, with numerous additions, by ROBERT P. THOMAS, M. D., Professor of Materia Medica in the Philadelphia College of Pharmacy. In one large and handsome octavo volume, extra cloth, of 650 pages, double columns. $4 00.

It was a work requiring much perseverance, and when published was looked upon as by far the best work of its kind that had issued from the American press. Prof. Thomas has certainly "improved," as well as added to this Formulary, and has rendered it additionally deserving of the confidence of pharmaceutists and physicians.—*Am. Journal of Pharmacy.*

We are happy to announce a new and improved edition of this, one of the most valuable and useful works that have emanated from an American pen. It would do credit to any country, and will be found of daily usefulness to practitioners of medicine; it is better adapted to their purposes than the dispensatories.—*Southern Med. and Surg. Journal.*

It is one of the most useful books a country practitioner can possibly have.—*Medical Chronicle.*

This is a work of six hundred and fifty-one pages embracing all on the subject of preparing and administering medicines that can be desired by the physician and pharmaceutist.—*Western Lancet.*

The amount of useful, every-day matter, for a practicing physician, is really immense.—*Boston Med. and Surg. Journal.*

This edition has been greatly improved by the revision and ample additions of Dr. Thomas, and is now, we believe, one of the most complete works of its kind in any language. The additions amount to about seventy pages, and no effort has been spared to include in them all the recent improvements. A work of this kind appears to us indispensable to the physician, and there is none we can more cordially recommend.—*N. Y. Journal of Medicine.*

Pre-eminent among the best and most useful compilations of the present day will be found the work before us, which can have been produced only at a very great cost of thought and labor. A short description will suffice to show that we do not put too high an estimate on this work. We are not cognizant of the existence of a parallel work. Its value will be apparent to our readers from the sketch of its contents above given. We strongly recommend it to all who are engaged either in practical medicine, or more exclusively with its literature.—*Lond. Med. Gazette.*

A very useful work, and a most complete compendium on the subject of materia medica. We know of no work in our language, or any other, so comprehensive in all its details.—*London Lancet.*

GROSS (SAMUEL D.), M. D.,

Professor of Surgery in the Jefferson Medical College of Philadelphia, &c.

Enlarged Edition.

A SYSTEM OF SURGERY: Pathological, Diagnostic, Therapeutic, and Operative. Illustrated by over THIRTEEN HUNDRED ENGRAVINGS. Third edition, much enlarged and carefully revised. In two large and beautifully printed royal octavo volumes, of 2200 pages; leather. $15 00. *(Just Issued.)*

The exhaustion within five years of two large editions of so elaborate and comprehensive a work as this is the best evidence that the author was not mistaken in his estimate of the want which existed of a complete American System of Surgery, presenting the science in all its necessary details and in all its branches. That he has succeeded in the attempt to supply this want is shown not only by the rapid sale of the work, but also by the very favorable manner in which it has been received by the organs of the profession in this country and in Europe, and by the fact that a translation is now preparing in Holland—a mark of appreciation not often bestowed on any scientific work so extended in size.

The author has not been insensible to the kindness thus bestowed upon his labors, and in revising the work for a third edition he has spared no pains to render it worthy of the favor with which it has been received. Every portion has been subjected to close examination and revision; any deficiencies apparent have been supplied, and the results of recent progress in the science and art of surgery have been everywhere introduced; while the series of illustrations has been still further enlarged, rendering it one of the most thoroughly illustrated works ever laid before the profession. To accommodate these very extensive additions, the form of the work has been altered to a royal octavo, so that notwithstanding the increase in the matter and value of the book, its size will be found more convenient than before. Every care has been taken in the printing to render the typographical execution unexceptionable, and it is confidently expected to prove a work in every way worthy of a place in even the most limited library of the practitioner or student.

Has Dr. Gross satisfactorily fulfilled this object? A careful perusal of his volumes enables us to give an answer in the affirmative. Not only has he given to the reader an elaborate and well-written account of his own vast experience, but he has not failed to embody in his pages the opinions and practice of surgeons in this and other countries of Europe. The result has been a work of such completeness, that it has no superior in the systematic treatises on surgery which have emanated from English or Continental authors. It has been justly objected that these have been far from complete in many essential particulars, many of them having been deficient in some of the most important points which should characterize such works. Some of them have been elaborate—too elaborate—with respect to certain diseases, while they have merely glanced at, or given an unsatisfactory account of, others equally important to the surgeon. Dr. Gross has avoided this error, and has produced the most complete work that has yet issued from the press on the science and practice of surgery. It is not, strictly speaking, a Dictionary of Surgery, but it gives to the reader all the information that he may require for his treatment of surgical diseases. Having said so much, it might appear superfluous to add another word; but it is only due to Dr. Gross to state that he has embraced the opportunity of transferring to his pages a vast number of engravings from English and other authors, illustrative of the pathology and treatment of surgical diseases. To these are added several hundred original wood-cuts. The work altogether commends itself to the attention of British surgeons, from whom it cannot fail to meet with extensive patronage.—*London Lancet*, Sept. 1, 1860.

Of Dr. Gross's treatise on Surgery we can say no more than that it is the most elaborate and complete work on this branch of the healing art which has ever been published in any country. A systematic work, it admits of no analytical review; but, did our space permit, we should gladly give some extracts from it, to enable our readers to judge of the classical style of the author, and the exhausting way in which each subject is treated.—*Dublin Quarterly Journal of Med. Science.*

The work is so superior to its predecessors in matter and extent, as well as in illustrations and style of publication, that we can honestly recommend it as the best work of the kind to be taken home by the young practitioner.—*Am. Med. Journ.*

With pleasure we record the completion of this long-anticipated work. The reputation which the author has for many years sustained, both as a surgeon and as a writer, had prepared us to expect a treatise of great excellence and originality; but we confess we were by no means prepared for the work which is before us—the most complete treatise upon surgery ever published, either in this or any other country, and we might, perhaps, safely say, the most original. There is no subject belonging properly to surgery which has not received from the author a due share of attention. Dr. Gross has supplied a want in surgical literature which has long been felt by practitioners; he has furnished us with a complete practical treatise upon surgery in all its departments. As Americans, we are proud of the achievement; as surgeons, we are most sincerely thankful to him for his extraordinary labors in our behalf.—*N. Y. Review and Buffalo Med. Journal.*

The great merit of the work may be stated as follows. It presents surgical science as it exists at the latest date, with all its improvements; and it discusses every topic in due proportion. Nothing is omitted, nothing is in excess.—*Chicago Med. Examiner*, May, 1860.

We cannot close this brief notice of Dr. Gross's most valuable and excellent compendium of Surgery without again drawing attention to it, as we did in our notice of his first edition, as an evidence of the progress our American brethren are making towards establishing a literature of their own.—*Dublin Quarterly Journal*, Feb. 1863.

It has been characterized by the representative press and by individual surgeons of the highest eminence, both at home and abroad, as "*the best systematic work on surgery ever published in the English language;*" and that the profession at large have given substantial proofs of their agreement to this verdict, is sufficiently evident from the fact that translations into European languages have been called for, and that so shortly after its first appearance, and at a time most unfavorable to literary "enterprise," the Philadelphia publishers have found it pay to issue a "second edition, much enlarged and carefully revised."—*American Med. Monthly*, May, 1862

We are much gratified to be able to announce a new edition of this Cyclopædia of Surgery. Considering the large size of the work and its expensiveness, the extremely rapid sale and exhaustion of an entire edition, not only proves the value of the work, and its adaptation to the wants of the profession, but it speaks well for the intelligence of American surgeons.—*American Medical Times*, May, 1862.

A valuable and even necessary addition to every surgical library.—*Chicago Med. Journ.*, Dec. 1859.

A system of surgery which we think unrivalled in our language.—*British American Journal.*

BY THE SAME AUTHOR.

A PRACTICAL TREATISE ON FOREIGN BODIES IN THE AIR-PASSAGES. In one handsome octavo volume, extra cloth, with illustrations. pp. 468. $2 75.

GROSS (SAMUEL D.), M. D.

Professor of Surgery in the Jefferson Medical College of Philadelphia, &c.

ELEMENTS OF PATHOLOGICAL ANATOMY. Third edition, thoroughly revised and greatly improved. In one large and very handsome octavo volume, with about three hundred and fifty beautiful illustrations, of which a large number are from original drawings, extra cloth. $4 00.

The very rapid advances in the Science of Pathological Anatomy during the last few years have rendered essential a thorough modification of this work, with a view of making it a correct exponent of the present state of the subject. The very careful manner in which this task has been executed, and the amount of alteration which it has undergone, have enabled the author to say that "with the many changes and improvements now introduced, the work may be regarded almost as a new treatise," while the efforts of the author have been seconded as regards the mechanical execution of the volume, rendering it one of the handsomest productions of the American press.

BY THE SAME AUTHOR.

A PRACTICAL TREATISE ON THE DISEASES, INJURIES, AND MALFORMATIONS OF THE URINARY BLADDER, THE PROSTATE GLAND, AND THE URETHRA. Second Edition, revised and much enlarged, with one hundred and eighty-four illustrations. In one large and very handsome octavo volume, of over nine hundred pages, extra cloth, $4 00.

Philosophical in its design, methodical in its arrangement, ample and sound in its practical details, it may in truth be said to leave scarcely anything to be desired on so important a subject.—*Boston Med. and Surg. Journal.*

Whoever will peruse the vast amount of valuable practical information it contains, will, we think, agree with us, that there is no work in the English language which can make any just pretensions to be its equal.—*N. Y. Journal of Medicine.*

A volume replete with truths and principles of the utmost value in the investigation of these diseases.—*American Medical Journal.*

GRAY (HENRY), F. R. S.,

Lecturer on Anatomy at St. George's Hospital, London, &c.

ANATOMY, DESCRIPTIVE AND SURGICAL. The Drawings by H. V. CARTER, M. D., late Demonstrator on Anatomy at St. George's Hospital; the Dissections jointly by the AUTHOR and Dr. CARTER. Second American, from the second revised and improved London edition. In one magnificent imperial octavo volume, of over 800 pages, with 388 large and elaborate engravings on wood. Price in extra cloth, $6 00; leather, raised bands, $7 00.

The speedy exhaustion of a large edition of this work is sufficient evidence that its plan and execution have been found to present superior practical advantages in facilitating the study of Anatomy. In presenting it to the profession a second time, the author has availed himself of the opportunity to supply any deficiencies which experience in its use had shown to exist, and to correct any errors of detail, to which the first edition of a scientific work on so extensive and complicated a science is liable. These improvements have resulted in some increase in the size of the volume, while twenty-six new wood-cuts have been added to the beautiful series of illustrations which form so distinctive a feature of the work. The American edition has been passed through the press under the supervision of a competent professional man, who has taken every care to render it in all respects accurate, and it is now presented, without any increase of price, as fitted to maintain and extend the popularity which it has everywhere acquired.

With little trouble, the busy practitioner whose knowledge of anatomy may have become obscured by want of practice, may now resuscitate his former anatomical lore, and be ready for any emergency. It is to this class of individuals, and not to the student alone, that this work will ultimately tend to be of most incalculable advantage, and we feel satisfied that the library of the medical man will soon be considered incomplete in which a copy of this work does not exist.—*Madras Quarterly Journal of Med. Science*, July, 1861.

This edition is much improved and enlarged, and contains several new illustrations by Dr. Westmacott. The volume is a complete companion to the dissecting-room, and saves the necessity of the student possessing a variety of "Manuals."—*The London Lancet*, Feb. 9, 1861.

The work before us is one entitled to the highest praise, and we accordingly welcome it as a valuable addition to medical literature. Intermediate in fulness of detail between the treatises of Sharpey and of Wilson, its characteristic merit lies in the number and excellence of the engravings it contains. Most of these are original, of much larger than ordinary size, and admirably executed. The various parts are also lettered after the plan adopted in Holden's Osteology. It would be difficult to over-estimate the advantages offered by this mode of pictorial illustration. Bones, ligaments, muscles, bloodvessels, and nerves are each in turn figured, and marked with their appropriate names; thus enabling the student to comprehend, at a glance, what would otherwise often be ignored, or at any rate, acquired only by prolonged and irksome application. In conclusion, we heartily commend the work of Mr. Gray to the attention of the medical profession, feeling certain that it should be regarded as one of the most valuable contributions ever made to educational literature.—*N. Y. Monthly Review*, Dec. 1859.

In this view, we regard the work of Mr. Gray as far better adapted to the wants of the profession, and especially of the student, than any treatise on anatomy yet published in this country. It is destined, we believe, to supersede all others, both as a manual of dissections, and a standard of reference to the student of general or relative anatomy.—*N. Y. Journal of Medicine*, Nov. 1859.

In our judgment, the mode of illustration adopted in the present volume cannot but present many advantages to the student of anatomy. To the zealous disciple of Vesalius, earnestly desirous of real improvement, the book will certainly be of immense value; but, at the same time, we must also confess that to those simply desirous of "cramming" it will be an undoubted godsend. The peculiar value of Mr. Gray's mode of illustration is nowhere more markedly evident than in the chapter on osteology, and especially in those portions which treat of the bones of the head and of their development. The study of these parts is thus made one of comparative ease, if not of positive pleasure; and those bugbears of the student, the temporal and aphenoid bones, are shorn of half their terrors. It is, in our estimation, an admirable and complete text-book for the student, and a useful work of reference for the practitioner; its pictorial character forming a novel element, to which we have already sufficiently alluded.—*Am. Journ. Med. Sci.*, July, 1859.

GIBSON'S INSTITUTES AND PRACTICE OF SURGERY. Eighth edition, improved and altered. With thirty-four plates. In two handsome octavo volumes, containing about 1,000 pages, leather, raised bands. $6 50.

GARDNER'S MEDICAL CHEMISTRY, for the use of Students and the Profession. In one royal 12mo. vol., cloth, pp. 396, with wood-cuts. $1.

GLUGE'S ATLAS OF PATHOLOGICAL HISTOLOGY. Translated, with Notes and Additions, by JOSEPH LEIDY, M. D. In one volume, very large imperial quarto, extra cloth, with 320 copper-plate figures, plain and colored, $4 00.

HUGHES' INTRODUCTION TO THE PRACTICE OF AUSCULTATION AND OTHER MODES OF PHYSICAL DIAGNOSIS, IN DISEASES OF THE LUNGS AND HEART. Second edition. 1 vol. royal 12mo., ex. cloth, pp. 304. $1 25.

HOLLAND'S MEDICAL NOTES AND REFLECTIONS. From the third London edition. In one handsome octavo volume, extra cloth. $3 50.

HORNER'S SPECIAL ANATOMY AND HISTOLOGY. Eighth edition. Extensively revised and modified. In two large octavo volumes, extra cloth, of more than 1000 pages, with over 300 illustrations. $6 00.

HILLIER (THOMAS), M. D.,

Physician to the Skin Department of University College Hospital; Physician to the Hospital for Sick Children, &c. &c.

HAND-BOOK OF SKIN DISEASES, FOR STUDENTS AND PRACTITIONERS.

In one neat royal 12mo. volume, of about 300 pages, with two plates; extra cloth, price $2 25. (*Lately published.*)

FROM THE AUTHOR'S PREFACE.

"My object has been to furnish to students and practitioners a trustworthy, practical, and compendious treatise, which shall comprise the greater part of what has long been known of cutaneous diseases, and of what has been more recently brought to light by English, French, and German dermatologists, as well as to embody the most important results of my own experience in reference to these diseases."

The author's position both as a lecturer, writer, and practitioner in this department of medicine, is a guarantee of his ability to accomplish his object in presenting a condensed and convenient manual, which shall comprise all that the general practitioner requires for his guidance.

A text book well adapted to the student, and the information contained in it shows the author to be *au niveau* with the scientific medicine of the day.—*London Lancet*, Feb. 25, 1865.

HAMILTON (FRANK H.), M. D.,

Professor of Surgery in the Long Island College Hospital.

A PRACTICAL TREATISE ON FRACTURES AND DISLOCATIONS.

Second edition, revised and improved. In one large and handsome octavo volume, of over 750 pages, with nearly 300 illustrations, extra cloth, $5 25.

The early demand for a new edition of this work shows that it has been successful in securing the confidence of the profession as a standard authority for consultation and reference on its important and difficult subject. In again passing it through the press, the author has taken the opportunity to revise it carefully, and introduce whatever improvements have been suggested by further experience and observation. An additional chapter on Gun-shot Fractures will be found to adapt it still more fully to the exigencies of the time.

Among the many good workers at surgery of whom America may now boast not the least is Frank Hastings Hamilton; and the volume before us is (we say it with a pang of wounded patriotism) the best and handiest book on the subject in the English language. It is in vain to attempt a review of it; nearly as vain to seek for any sins, either of commission or omission. We have seen no work on practical surgery which we would sooner recommend to our brother surgeons, especially those of "the services," or those whose practice lies in districts where a man has necessarily to rely on his own unaided resources. The practitioner will find in it directions for nearly every possible accident, easily found and comprehended; and much pleasant reading for him to muse over in the after consideration of his cases.—*Edinburgh Med. Journ.* Feb. 1861.

This is a valuable contribution to the surgery of most important affections, and is the more welcome, inasmuch as at the present time we do not possess a single complete treatise on Fractures and Dislocations in the English language. It has remained for our American brother to produce a complete treatise upon the subject, and bring together in a convenient form those alterations and improvements that have been made from time to time in the treatment of these affections. One great and valuable feature in the work before us is the fact that it comprises all the improvements introduced into the practice of both English and American surgery, and though far from omitting mention of our continental neighbors, the author by no means encourages the notion—but too prevalent in some quarters—that nothing is good unless imported from France or Germany. The latter half of the work is devoted to the consideration of the various dislocations and their appropriate treatment, and its merit is fully equal to that of the preceding portion.—*The London Lancet*, May 5, 1860.

It is emphatically *the* book upon the subjects of which it treats, and we cannot doubt that it will continue so to be for an indefinite period of time. When we say, however, that we believe it will at once take its place as the best book for consultation by the practitioner; and that it will form the most complete, available, and reliable guide in emergencies of every nature connected with its subjects; and also that the student of surgery may make it his text-book with entire confidence, and with pleasure also, from its agreeable and easy style—we think our own opinion may be gathered as to its value.—*Boston Medical and Surgical Journal*, March 1, 1860.

HODGE (HUGH L.), M. D.,

Professor of Midwifery and the Diseases of Women and Children in the University of Pennsylvania, &c.

ON DISEASES PECULIAR TO WOMEN, including Displacements of the Uterus.

With original illustrations. In one beautifully printed octavo volume, of nearly 500 pages, extra cloth. $3 75.

This contribution towards the elucidation of the pathology and treatment of some of the diseases peculiar to women, cannot fail to meet with a favorable reception from the medical profession. The character of the particular maladies of which the work before us treats; their frequency, variety, and obscurity; the amount of malaise and even of actual suffering by which they are invariably attended; their obstinacy, the difficulty with which they are overcome, and their disposition again and again to recur—these, taken in connection with the entire competency of the author to render a correct account of their nature, their causes, and their appropriate management—his ample experience, his matured judgment, and his perfect conscientiousness—invest this publication with an interest and value to which few of the medical treatises of a recent date can lay a stronger, if, perchance, an equal claim.—*Am. Journ. Med. Sciences*, Jan. 1861.

The illustrations, which are all original, are drawn to a uniform scale of one-half the natural size.

HODGE (HUGH L.), M. D.,

Late Professor of Midwifery, &c., in the University of Pennsylvania.

PRINCIPLES AND PRACTICE OF OBSTETRICS. In one large quarto volume of over 550 pages, with one hundred and fifty-eight figures on thirty-two beautifully executed lithographic plates, and numerous wood-cuts in the text. $14 00. *(Just Issued.)*

This work, embodying the results of an extensive practice for more than forty years, cannot fail to prove of the utmost value to all who are engaged in this department of medicine. The author's position as one of the highest authorities on the subject in this country is well known, and the fruit of his ripe experience and long observation, carefully matured and elaborated, must serve as an invaluable text-book for the student and an unfailing counsel for the practitioner in the emergencies which so frequently arise in obstetric practice.

The illustrations form a novel feature in the work. The lithographic plates are all original, and to insure their absolute accuracy they have all been copied from photographs taken expressly for the purpose. In ordinary obstetrical plates, the positions of the fœtus are represented by diagrams or sections of the patient, which are of course purely imaginary, and their correctness is scarcely more than a matter of chance with the artist. Their beauty as pictures is thereby increased without corresponding utility to the student, as in practice he must for the most part depend for his diagnosis upon the relative positions of the fœtal skull and the pelvic bones of the mother. It is, therefore, desirable that the points upon which he is in future to rely, should form the basis of his instruction, and consequently in the preparation of these illustrations the skeleton has alone been used, and the aid of photography invoked, by which a series of representations has been secured of the strictest and most rigid accuracy. It is easy to recognize the value thus added to the very full details on the subject of the MECHANISM OF LABOUR with which the work abounds.

It may be added that no pains or expense have been spared to render the mechanical execution of the volume worthy in every respect of the character and value of the teachings it contains.

HABERSHON (S. O.), M. D.,

Assistant Physician to and Lecturer on Materia Medica and Therapeutics at Guy's Hospital, &c.

PATHOLOGICAL AND PRACTICAL OBSERVATIONS ON DISEASES OF THE ALIMENTARY CANAL, ŒSOPHAGUS, STOMACH, CÆCUM, AND INTESTINES. With illustrations on wood. In one handsome octavo volume of 312 pages, extra cloth. $2 50.

HOBLYN (RICHARD D.), M. D.

A DICTIONARY OF THE TERMS USED IN MEDICINE AND THE COLLATERAL SCIENCES. A new American edition. Revised, with numerous Additions, by ISAAC HAYS, M. D., editor of the "American Journal of the Medical Sciences." In one large royal 12mo. volume, cloth, of over 500 double columned pages. $1 50.

To both practitioner and student, we recommend this dictionary as being convenient in size, accurate in definition, and sufficiently full and complete for ordinary consultation.—*Charleston Med. Journ.*

We know of no dictionary better arranged and adapted. It is not encumbered with the obsolete terms of a bygone age, but it contains all that are now in use; embracing every department of medical science down to the very latest date.—*Western Lancet.*

Hoblyn's Dictionary has long been a favorite with us. It is the best book of definitions we have, and ought always to be upon the student's table.—*Southern Med. and Surg. Journal.*

JONES (T. WHARTON), F. R. S.,

Professor of Ophthalmic Medicine and Surgery in University College, London, &c.

THE PRINCIPLES AND PRACTICE OF OPHTHALMIC MEDICINE AND SURGERY. With one hundred and seventeen illustrations. Third and revised American, with additions from the second London edition. In one handsome octavo volume, extra cloth, of 455 pages. $3 25.

Seven years having elapsed since the appearance of the last edition of this standard work, very considerable additions have been found necessary to adapt it thoroughly to the advance of ophthalmic science. The introduction of the ophthalmoscope has resulted in adding greatly to our knowledge of the pathology of the diseases of the eye, particularly of its more deeply seated tissues, and corresponding improvements in medical treatment and operative procedures have been introduced. All these matters the editor has endeavoured to add, bearing in mind the character of the volume as a condensed and practical manual. To accommodate this unavoidable increase in the size of the work, its form has been changed from a duodecimo to an octavo, and it is presented as worthy a continuance of the favour which has been bestowed on former editions.

A complete series of "test-types" for examining the accommodating power of the eye, will be found an important and useful addition.

JONES (C. HANDFIELD), F. R. S., & EDWARD H. SIEVEKING, M. D.,

Assistant Physicians and Lecturers in St. Mary's Hospital, London.

A MANUAL OF PATHOLOGICAL ANATOMY. First American Edition, Revised. With three hundred and ninety-seven handsome wood engravings. In one large and beautiful octavo volume of nearly 750 pages, extra cloth. $3 50.

As a concise text-book, containing, in a condensed form, a complete outline of what is known in the domain of Pathological Anatomy, it is perhaps the best work in the English language. Its great merit consists in its completeness and brevity, and in this respect it supplies a great desideratum in our literature. Heretofore the student of pathology was obliged to glean from a great number of monographs, and the field was so extensive that but few cultivated it with any degree of success. As a simple work of reference, therefore, it is of great value to the student of pathological anatomy, and should be in every physician's library.—*Western Lancet.*

KIRKES (WILLIAM SENHOUSE), M. D.,

Demonstrator of Morbid Anatomy at St. Bartholomew's Hospital, &c.

A MANUAL OF PHYSIOLOGY. A new American, from the third and improved London edition. With two hundred illustrations. In one large and handsome royal 12mo. volume, extra cloth. pp. 566. $2 25.

This is a new and very much improved edition of Dr. Kirkes' well-known Handbook of Physiology. It combines conciseness with completeness, and is, therefore, admirably adapted for consultation by the busy practitioner.—*Dublin Quarterly Journal.*

One of the very best handbooks of Physiology we possess—presenting just such an outline of the science as the student requires during his attendance upon a course of lectures, or for reference whilst preparing for examination.—*Am. Medical Journal.*

Its excellence is in its compactness, its clearness, and its carefully cited authorities. It is the most convenient of text-books. These gentlemen, Messrs. Kirkes and Paget, have the gift of telling us what we want to know, without thinking it necessary to tell us all they know.—*Boston Med. and Surg. Journal.*

For the student beginning this study, and the practitioner who has but leisure to refresh his memory, this book is invaluable, as it contains all that it is important to know.—*Charleston Med. Journal.*

KNAPP'S TECHNOLOGY; or, Chemistry applied to the Arts and to Manufactures. Edited by Dr. RONALDS, Dr. RICHARDSON, and Prof. W. R. JOHNSON. In two handsome 8vo. vols., extra cloth, with about 500 wood-engravings. $6 00.

LAYCOCK'S LECTURES ON THE PRINCIPLES AND METHODS OF MEDICAL OBSERVATION AND RESEARCH. For the Use of Advanced Students and Junior Practitioners. In one royal 12mo. volume, extra cloth. Price $1.

LALLEMAND AND WILSON.

A PRACTICAL TREATISE ON THE CAUSES, SYMPTOMS, AND TREATMENT OF SPERMATORRHŒA. By M. LALLEMAND. Translated and edited by HENRY J. McDOUGALL. Third American edition. To which is added —— ON DISEASES OF THE VESICULÆ SEMINALES; AND THEIR ASSOCIATED ORGANS. With special reference to the Morbid Secretions of the Prostatic and Urethral Mucous Membrane. By MARRIS WILSON, M. D. In one neat octavo volume, of about 400 pp., extra cloth. $2 75.

LA ROCHE (R.), M. D., &c.

YELLOW FEVER, considered in its Historical, Pathological, Etiological, and Therapeutical Relations. Including a Sketch of the Disease as it has occurred in Philadelphia from 1699 to 1854, with an examination of the connections between it and the fevers known under the same name in other parts of temperate as well as in tropical regions. In two large and handsome octavo volumes of nearly 1500 pages, extra cloth. $7 00.

We have not time at present, engaged as we are, by day and by night, in the work of combating this very disease, now prevailing in our city, to do more than give this cursory notice of what we consider as undoubtedly the most able and erudite medical publication our country has yet produced. But in view of the startling fact, that this, the most malignant and unmanageable disease of modern times, has for several years been prevailing in our country to a greater extent than ever before; that it is no longer confined to either large or small cities, but penetrates country villages, plantations, and farm-houses; that it is treated with scarcely better success now than thirty or forty years ago; that there is vast mischief done by ignorant pretenders to knowledge in regard to the disease, and in view of the probability that a majority of southern physicians will be called upon to treat the disease, we trust that this able and comprehensive treatise will be very generally read in the south.—*Memphis Med. Recorder.*

BY THE SAME AUTHOR.

PNEUMONIA; its Supposed Connection, Pathological and Etiological, with Autumnal Fevers, including an Inquiry into the Existence and Morbid Agency of Malaria. In one handsome octavo volume, extra cloth, of 500 pages. $3 00.

LEHMANN (C. G.)

PHYSIOLOGICAL CHEMISTRY. Translated from the second edition by GEORGE E. DAY, M. D., F. R. S., &c., edited by R. E. ROGERS, M. D., Professor of Chemistry in the Medical Department of the University of Pennsylvania, with illustrations selected from Funke's Atlas of Physiological Chemistry, and an Appendix of plates. Complete in two large and handsome octavo volumes, extra cloth, containing 1200 pages, with nearly two hundred illustrations. $6 00.

The work of Lehmann stands unrivalled as the most comprehensive book of reference and information extant on every branch of the subject on which it treats.—*Edinburgh Journal of Medical Science.*

The most important contribution as yet made to Physiological Chemistry.—*Am. Journal Med. Sciences*, Jan. 1856.

BY THE SAME AUTHOR.

MANUAL OF CHEMICAL PHYSIOLOGY. Translated from the German, with Notes and Additions, by J. CHESTON MORRIS, M. D., with an Introductory Essay on Vital Force, by Professor SAMUEL JACKSON, M. D., of the University of Pennsylvania. With illustrations on wood. In one very handsome octavo volume, extra cloth, of 336 pages. $2 25.

LUDLOW (J. L.), M. D.

A MANUAL OF EXAMINATIONS upon Anatomy, Physiology, Surgery, Practice of Medicine, Obstetrics, Materia Medica, Chemistry, Pharmacy, and Therapeutics. To which is added a Medical Formulary. Third edition, thoroughly revised and greatly extended and enlarged. With 370 illustrations. In one handsome royal 12mo. volume, of 816 large pages, extra cloth, $3 25.

We know of no better companion for the student during the hours spent in the lecture room, or to refresh, at a glance, his memory of the various topics *crammed* into his head by the various professors to whom he is compelled to listen.—*Western Lancet*, May, 1857.

LYONS (ROBERT D.), K. C. C.,

Late Pathologist-in-chief to the British Army in the Crimea, &c.

A TREATISE ON FEVER; or, selections from a course of Lectures on Fever.

Being part of a course of Theory and Practice of Medicine. In one neat octavo volume, of 362 pages, extra cloth; $2 25.

This is an admirable work upon the most remarkable and most important class of diseases to which mankind are liable.—*Med. Journ. of N. Carolina*, May, 1861.

We have great pleasure in recommending Dr. Lyons' work on *Fever* to the attention of the profession. It is a work which cannot fail to enhance the author's previous well-earned reputation, as a diligent, careful, and accurate observer.—*British Med. Journal*, March 2, 1861.

MONTGOMERY (W. F.), M. D., M. R. I. A., &c.,

Professor of Midwifery in the King and Queen's College of Physicians in Ireland, &c.

AN EXPOSITION OF THE SIGNS AND SYMPTOMS OF PREGNANCY.

With some other Papers on Subjects connected with Midwifery. From the second and enlarged English edition. With two exquisite colored plates, and numerous wood-cuts. In one very handsome octavo volume, extra cloth, of nearly 600 pages. $3 75.

A book unusually rich in practical suggestions.—*Am. Journal Med. Sciences*, Jan. 1857.

These several subjects so interesting in themselves, and so important, every one of them, to the most delicate and precious of social relations, controlling often the honor and domestic peace of a family, the legitimacy of offspring, or the life of its parent, are all treated with an elegance of diction, fulness of illustrations, acuteness and justice of reasoning, unparalleled in obstetrics, and unsurpassed in medicine. The reader's interest can never flag, so fresh, and vigorous, and classical is our author's style; and one forgets, in the renewed charm of every page, that it, and every line, and every word has been weighed and reweighed through years of preparation; that this is of all others the book of Obstetric Law, on each of its several topics; on all points connected with pregnancy, to be everywhere received as a manual of special jurisprudence, at once announcing fact, affording argument, establishing precedent, and governing alike the juryman, advocate, and judge.—*N. A. Med.-Chir. Review.*

MEIGS (CHARLES D.), M. D.,

Lately Professor of Obstetrics, &c. in the Jefferson Medical College, Philadelphia.

OBSTETRICS: THE SCIENCE AND THE ART. Fourth edition, revised and improved.

With one hundred and twenty-nine illustrations. In one beautifully printed octavo volume, of seven hundred and thirty large pages, extra cloth, $5 00.

FROM THE AUTHOR'S PREFACE.

"In this edition I have endeavored to amend the work by changes in its form; by careful corrections of many expressions, and by a few omissions and some additions as to the text.

"The Student will find that I have recast the article on Placenta Prævia, which I was led to do out of my desire to notice certain new modes of treatment which I regarded as not only ill founded as to the philosophy of our department, but dangerous to the people.

"In changing the form of my work by dividing it into paragraphs or sections, numbered from 1 to 959, I thought to present to the reader a common-place book of the whole volume. Such a table of contents ought to prove both convenient and useful to a Student while attending public lectures."

A work which has enjoyed so extensive a reputation and has been received with such general favor, requires only the assurance that the author has labored assiduously to embody in his new edition whatever has been found necessary to render it fully on a level with the most advanced state of the subject. Both as a text-book for the student and as a reliable work of reference for the practitioner, it is therefore to be hoped that the volume will be found worthy a continuance of the confidence reposed in previous editions.

BY THE SAME AUTHOR.

WOMAN: HER DISEASES AND THEIR REMEDIES. A Series of Lectures to his Class. Fourth and Improved edition.

In one large and beautifully printed octavo volume, extra cloth, of over 700 pages. $5 00.

In other respects, in our estimation, too much cannot be said in praise of this work. It abounds with beautiful passages, and for conciseness, for originality, and for all that is commendable in a work on the diseases of females, it is not excelled, and probably not equalled in the English language. On the whole, we know of no work on the diseases of women which we can so cordially commend to the student and practitioner as the one before us.—*Ohio Med. and Surg. Journal.*

The body of the book is worthy of attentive consideration, and is evidently the production of a clever, thoughtful, and sagacious physician. Dr. Meigs's letters on the diseases of the external organs, contain many interesting and rare cases, and many instructive observations. We take our leave of Dr. Meigs, with a high opinion of his talents and originality.—*The British and Foreign Medico-Chirurgical Review.*

Every chapter is replete with practical instruction, and bears the impress of being the composition of an acute and experienced mind. There is a terseness, and at the same time an accuracy in his description of symptoms, and in the rules for diagnosis, which cannot fail to recommend the volume to the attention of the reader.—*Ranking's Abstract.*

It contains a vast amount of practical knowledge, by one who has accurately observed and retained the experience of many years.—*Dublin Quarterly Journal.*

Full of important matter, conveyed in a ready and agreeable manner.—*St. Louis Med. and Surg. Jour.*

There is an off-hand fervor, a glow, and a warm-heartedness infecting the effort of Dr. Meigs, which is entirely captivating, and which absolutely hurries the reader through from beginning to end. Besides, the book teems with solid instruction, and it shows the very highest evidence of ability, viz., the clearness with which the information is presented. We know of no better test of one's understanding a subject than the evidence of the power of lucidly explaining it. The most elementary, as well as the obscurest subjects, under the pencil of Prof. Meigs, are isolated and made to stand out in such bold relief, as to produce distinct impressions upon the mind and memory of the reader.—*The Charleston Med. Journal.*

MEIGS (CHARLES D.) M. D.,

Lately Professor of Obstetrics, &c., in Jefferson Medical College, Philadelphia.

ON THE NATURE, SIGNS, AND TREATMENT OF CHILDBED FEVER.

In a Series of Letters addressed to the Students of his Class. In one handsome octavo volume, extra cloth, of 365 pages. $2 00.

The instructive and interesting author of this work, whose previous labors have placed his countrymen under deep and abiding obligations, again challenges their admiration in the fresh and vigorous, attractive and racy pages before us. It is a delectable book. * * * This treatise upon childbed fevers will have an extensive sale, being destined, as it deserves, to find a place in the library of every practitioner who scorns to lag in the rear.—*Nashville Journal of Medicine and Surgery.*

MACLISE (JOSEPH), SURGEON.

SURGICAL ANATOMY.

Forming one volume, very large imperial quarto. With sixty-eight large and splendid Plates, drawn in the best style and beautifully colored. Containing one hundred and ninety Figures, many of them the size of life. Together with copious and explanatory letter-press. Strongly and handsomely bound in extra cloth, being one of the cheapest and best executed Surgical works as yet issued in this country. $14 00.

These plates will be found of the highest practical value, either for consultation in emergencies or to refresh the recollections of the dissecting room.

*** The size of this work prevents its transmission through the post-office as a whole, but those who desire to have copies forwarded by mail, can receive them in five parts, done up in stout wrappers. Price $12 00.

One of the greatest artistic triumphs of the age in Surgical Anatomy.—*British American Medical Journal.*

No practitioner whose means will admit should fail to possess it.—*Ranking's Abstract.*

Too much cannot be said in its praise; indeed, we have not language to do it justice.—*Ohio Medical and Surgical Journal.*

The most accurately engraved and beautifully colored plates we have ever seen in an American book—one of the best and cheapest surgical works ever published.—*Buffalo Medical Journal.*

It is very rare that so elegantly printed, so well illustrated, and so useful a work, is offered at so moderate a price.—*Charleston Medical Journal.*

Its plates can boast a superiority which places them almost beyond the reach of competition.—*Medical Examiner.*

Country practitioners will find these plates of immense value.—*N. Y. Medical Gazette.*

A work which has no parallel in point of accuracy and cheapness in the English language.—*N. Y. Journal of Medicine.*

We are extremely gratified to announce to the profession the completion of this truly magnificent work, which, as a whole, certainly stands unrivalled, both for accuracy of drawing, beauty of coloring, and all the requisite explanations of the subject in hand.—*The New Orleans Medical and Surgical Journal.*

This is by far the ablest work on Surgical Anatomy that has come under our observation. We know of no other work that would justify a student, in any degree, for neglect of actual dissection. In those sudden emergencies that so often arise, and which require the instantaneous command of minute anatomical knowledge, a work of this kind keeps the details of the dissecting-room perpetually fresh in the memory.—*The Western Journal of Medicine and Surgery.*

MILLER (HENRY), M. D.,

Professor of Obstetrics and Diseases of Women and Children in the University of Louisville.

PRINCIPLES AND PRACTICE OF OBSTETRICS, &c.;

including the Treatment of Chronic Inflammation of the Cervix and Body of the Uterus considered as a frequent cause of Abortion. With about one hundred illustrations on wood. In one very handsome octavo volume, of over 600 pages, extra cloth. $3 75.

We congratulate the author that the task is done. We congratulate him that he has given to the medical public a work which will secure for him a high and permanent position among the standard authorities on the principles and practice of obstetrics. Congratulations are not less due to the medical profession of this country, on the acquisition of a treatise embodying the results of the studies, reflections, and experience of Prof. Miller.—*Buffalo Medical Journal.*

In fact, this volume must take its place among the standard systematic treatises on obstetrics; a position to which its merits justly entitle it.—*The Cincinnati Lancet and Observer.*

A most respectable and valuable addition to our home medical literature, and one reflecting credit alike on the author and the institution to which he is attached. The student will find in this work a most useful guide to his studies; the country practitioner, rusty in his reading, can obtain from its pages a fair resumé of the modern literature of the science; and we hope to see this American production generally consulted by the profession.—*Va. Med. Journal.*

MACKENZIE (W.), M. D.,

Surgeon Oculist in Scotland in ordinary to Her Majesty, &c. &c.

A PRACTICAL TREATISE ON DISEASES AND INJURIES OF THE EYE.

To which is prefixed an Anatomical Introduction explanatory of a Horizontal Section of the Human Eyeball, by THOMAS WHARTON JONES, F. R. S. From the Fourth Revised and Enlarged London Edition. With Notes and Additions by ADDINELL HEWSON, M. D., Surgeon to Wills Hospital, &c. &c. In one very large and handsome octavo volume, extra cloth, with plates and numerous wood-cuts. $6 50.

The treatise of Dr. Mackenzie indisputably holds the first place, and forms, in respect of learning and research, an Encyclopædia unequalled in extent by any other work of the kind, either English or foreign.—*Dixon on Diseases of the Eye.*

We consider it the duty of every one who has the love of his profession and the welfare of his patient at heart, to make himself familiar with this the most complete work in the English language upon the diseases of the eye.—*Med. Times and Gazette.*

MILLER (JAMES), F. R. S. E.,

Professor of Surgery in the University of Edinburgh, &c.

PRINCIPLES OF SURGERY. Fourth American, from the third and revised Edinburgh edition. In one large and very beautiful volume, extra cloth, of 700 pages, with two hundred and forty illustrations on wood. $3 75.

BY THE SAME AUTHOR.

THE PRACTICE OF SURGERY. Fourth American, from the last Edinburgh edition. Revised by the American editor. Illustrated by three hundred and sixty-four engravings on wood. In one large octavo volume, extra cloth, of nearly 700 pages. $3 75.

No encomium of ours could add to the popularity of Miller's Surgery. Its reputation in this country is unsurpassed by that of any other work, and, when taken in connection with the author's *Principles of Surgery*, constitutes a whole, without reference to which no conscientious surgeon would be willing to practice his art.—*Southern Med. and Surg. Journal.*

It is seldom that two volumes have ever made so profound an impression in so short a time as the "Principles" and the "Practice" of Surgery by Mr. Miller—or so richly merited the reputation they have acquired. The author is an eminently sensible, practical, and well-informed man, who knows exactly what he is talking about and exactly how to talk it.—*Kentucky Medical Recorder.*

By the almost unanimous voice of the profession, his works, both on the principles and practice of surgery have been assigned the highest rank. If we were limited to but one work on surgery, that one should be Miller's, as we regard it as superior to all others.—*St. Louis Med. and Surg. Journal.*

The author has in this and his "Principles," presented to the profession one of the most complete and reliable systems of Surgery extant. His style of writing is original, impressive, and engaging, energetic, concise, and lucid. Few have the faculty of condensing so much in small space, and at the same time so persistently holding the attention. Whether as a text-book for students or a book of reference for practitioners, it cannot be too strongly recommended.—*Southern Journal of Med. and Physical Sciences.*

MORLAND (W. W.), M. D.,

Fellow of the Massachusetts Medical Society, &c.

DISEASES OF THE URINARY ORGANS; a Compendium of their Diagnosis, Pathology, and Treatment. With illustrations. In one large and handsome octavo volume, of about 600 pages, extra cloth. $3 50.

Taken as a whole, we can recommend Dr. Morland's compendium as a very desirable addition to the library of every medical or surgical practitioner.—*Brit. and For. Med.-Chir. Rev.*, April, 1859.

Every medical practitioner whose attention has been to any extent attracted towards the class of diseases to which this treatise relates, must have often and sorely experienced the want of some full, yet concise recent compendium to which he could refer. This desideratum has been supplied by Dr. Morland, and it has been ably done. He has placed before us a full, judicious, and reliable digest. Each subject is treated with sufficient minuteness, yet in a succinct, narrational style, such as to render the work one of great interest, and one which will prove in the highest degree useful to the general practitioner.—*N. Y. Journ. of Medicine.*

BY THE SAME AUTHOR.

THE MORBID EFFECTS OF THE RETENTION IN THE BLOOD OF THE ELEMENTS OF THE URINARY SECRETION. Being the Dissertation to which the Fiske Fund Prize was awarded, July 11, 1861. In one small octavo volume, 83 pages, extra cloth. 75 cents.

MAYNE'S DISPENSATORY AND THERAPEUTICAL REMEMBRANCER. With every Practical Formula contained in the three British Pharmacopœias. Edited, with the addition of the Formulæ of the U. S. Pharmacopœia, by R. E. GRIFFITH, M. D. 1 12mo. vol. ex. cl., 300 pp. 75 c.

MALGAIGNE'S OPERATIVE SURGERY, based on Normal and Pathological Anatomy. Translated from the French by FREDERICK BRITTAN, A. B., M. D. With numerous illustrations on wood. In one handsome octavo volume, extra cloth, of nearly six hundred pages. $2 50.

NELIGAN (J. MOORE), M. D., M. R. I. A., &c.

ATLAS OF CUTANEOUS DISEASES. In one beautiful quarto volume, extra cloth, with splendid colored plates, presenting nearly one hundred elaborate representations of disease. $5 50.

This beautiful volume is intended as a complete and accurate representation of all the varieties of Diseases of the Skin. While it can be consulted in conjunction with any work on Practice, it has especial reference to the author's "Treatise on Diseases of the Skin," so favorably received by the profession some years since. The publishers feel justified in saying that few more beautifully executed plates have ever been presented to the profession of this country.

Neligan's Atlas of Cutaneous Diseases supplies a long existent desideratum much felt by the largest class of our profession. It presents, in quarto size, 16 plates, each containing from 3 to 6 figures, and forming in all a total of 90 distinct representations of the different species of skin affections, grouped together in genera or families. The illustrations have been taken from nature, and have been copied with such fidelity that they present a striking picture of life; in which the reduced scale aptly serves to give, at a *coup d'œil*, the remarkable peculiarities of each individual variety. And while thus the disease is rendered more definable, there is yet no loss of proportion incurred by the necessary concentration. Each figure is highly colored, and so truthful has the artist been that the most fastidious observer could not justly take exception to the correctness of the execution of the pictures under his scrutiny.—*Montreal Med. Chronicle.*

BY THE SAME AUTHOR.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN. Fourth American edition. In one neat royal 12mo. volume, extra cloth, of 334 pages. $1 50.

NEILL (JOHN), M. D.,

Surgeon to the Pennsylvania Hospital, &c.; and

FRANCIS GURNEY SMITH, M. D.,

Professor of Institutes of Medicine in the Pennsylvania Medical College.

AN ANALYTICAL COMPENDIUM OF THE VARIOUS BRANCHES OF MEDICAL SCIENCE; for the Use and Examination of Students. A new edition, revised and improved. In one very large and handsomely printed royal 12mo. volume, of about one thousand pages, with 374 wood-cuts, extra cloth, $4 00. Strongly bound in leather, with raised bands. $4 75.

This work is again presented as eminently worthy of the favor with which it has hitherto been received. As a book for daily reference by the student requiring a guide to his more elaborate text-books, as a manual for preceptors desiring to stimulate their students by frequent and accurate examination, or as a source from which the practitioners of older date may easily and cheaply acquire a knowledge of the changes and improvement in professional science, its reputation is permanently established.

The best work of the kind with which we are acquainted.—*Med. Examiner.*

Having made free use of this volume in our examinations of pupils, we can speak from experience in recommending it as an admirable compend for students, and as especially useful to preceptors who examine their pupils. It will save the teacher much labor by enabling him readily to recall all of the points upon which his pupils should be examined. A work of this sort should be in the hands of every one who takes pupils into his office with a view of examining them; and this is unquestionably the best of its class.—*Transylvania Med. Journal.*

In the rapid course of lectures, where work for the students is heavy, and review necessary for an examination, a compend is not only valuable, but it is almost a *sine qua non*. The one before us is, in most of the divisions, the most unexceptionable of all books of the kind that we know of. The newest and soundest doctrines and the latest improvements and discoveries are explicitly, though concisely, laid before the student. There is a class to whom we very sincerely commend this cheap book as worth its weight in silver—that class is the graduates in medicine of more than ten years' standing, who have not studied medicine since.—*The Stethoscope.*

PIRRIE (WILLIAM), F. R. S. E.,

Professor of Surgery in the University of Aberdeen.

THE PRINCIPLES AND PRACTICE OF SURGERY. Edited by JOHN NEILL, M. D., Professor of Surgery in the Penna. Medical College, Surgeon to the Pennsylvania Hospital, &c. In one very handsome 8vo. volume, extra cloth, of 780 pages, with 316 illustrations. $3 75.

We know of no other surgical work of a reasonable size, wherein there is so much theory and practice, or where subjects are more soundly or clearly taught.—*The Stethoscope.*

Prof. Pirrie, in the work before us, has elaborately discussed the principles of surgery, and a safe and effectual practice predicated upon them. Perhaps no work upon this subject heretofore issued is so full upon the science of the art of surgery.—*Nashville Journal of Medicine and Surgery.*

PEREIRA (JONATHAN), M.D.

EDITED BY PROF. H. C. WOOD.

MATERIA MEDICA AND THERAPEUTICS; being an Abridgment of the late Dr. Pereira's Elements of Materia Medica, arranged in conformity with the British Pharmacopœia, and adapted to the use of Medical Practitioners, Chemists, and Druggists, Medical and Pharmaceutical Students, &c. By F. J. FARRE, M. D., Senior Physician to St. Bartholomew's Hospital, and London Editor of the British Pharmacopœia; assisted by ROBERT BENTLEY, M. R. C. S., Professor of Materia Medica and Botany to the Pharmaceutical Society of Great Britain; and by ROBERT WARINGTON, F. R. S., Chemical Operator to the Society of Apothecaries. With numerous additions and references to the United States Pharmacopœia, by HORATIO C. WOOD, M. D., Professor of Botany in the University of Pennsylvania. In one large and handsome octavo volume of about 900 pages, with numerous illustrations. (*Preparing.*)

ROBERTS (WILLIAM) M. D.,

Physician to the Manchester Royal Infirmary, Lecturer on Medicine in the Manchester School of Medicine, &c.

A PRACTICAL TREATISE ON URINARY AND RENAL DISEASES, including Urinary Deposits. Illustrated by numerous cases and engravings. In one handsome octavo volume of over 500 pages, extra cloth. Price $4 50. (*Now Ready.*)

The want has for some time been felt of a work which should render accessible to the American profession in a compendious and convenient form, the results of the numerous and important researches which have of late years elucidated the pathology of Urinary and Renal Diseases. It has been the aim of the author in the present volume to set forth in a form divested of undue technicality, the practical condition of the subject in its most advanced stage of progress. In endeavoring to accomplish this, he has refrained from crowding the volume with minute chemical and physiological details, which would unfit it for its object of affording to the physician a guide in his daily practice, and to the student a condensed and intelligible compendium of all that is practically important on the subject. To aid in this, numerous cases and illustrations have been introduced throughout the work.

The book is beyond question the most comprehensive work on Urinary and Renal Diseases, considered in their strictly practical aspect, that we possess in the English language.—*British Medical Journal.*

PARRISH (EDWARD),

Professor of Materia Medica in the Philadelphia College of Pharmacy.

A TREATISE ON PHARMACY. Designed as a Text-book for the Student, and as a Guide for the Physician and Pharmaceutist. With many Formulæ and Prescriptions. Third edition, greatly improved. In one handsome octavo volume, of 850 pages, with several hundred Illustrations, extra cloth. $5 00. *(Just Issued.)*

Though for some time out of print, the appearance of a new edition of this work has been delayed for the purpose of embodying in it the results of the new U. S. Pharmacopœia. The publication of this latter has enabled the author to complete his revision in the most thorough manner. Those who have been waiting for the work may therefore rely on obtaining a volume completely on a level with the most advanced condition of pharmaceutical science.

The favor with which the work has thus far been received shows that the author was not mistaken in his estimate of the want of a treatise which should serve as a practical text-book for all engaged in preparing and dispensing medicines. Such a guide was indispensable not only to the educated pharmaceutist, but also to that large class of practitioners throughout the country who are obliged to compound their own prescriptions, and who during their collegiate course have no opportunity of obtaining a practical familiarity with the necessary processes and manipulations. The rapid exhaustion of two large editions is evidence that the author has succeeded in thoroughly carrying out his object. Since the appearance of the last edition, much has been done to perfect the science; the new Pharmacopœia has introduced many changes to which the profession must conform; and the author has labored assiduously to embody in his work all that physicians and pharmaceutists can ask for in such a volume. The new matter alone will thus be found worth more than the very moderate cost of the work to those who have been using the previous editions.

All that we can say of it is that to the practising physician, and especially the country physician, who is generally his own apothecary, there is hardly any book that might not better be dispensed with. It is at the same time a dispensatory and a pharmacy.—*Louisville Review.*

A careful examination of this work enables us to speak of it in the highest terms, as being the best treatise on practical pharmacy with which we are acquainted, and an invaluable *vade-mecum*, not only to the apothecary and to those practitioners who are accustomed to prepare their own medicines, but to every medical man and medical student.—*Boston Med. and Surg. Journal.*

This is altogether one of the most useful books we have seen. It is just what we have long felt to be needed by apothecaries, students, and practitioners of medicine, most of whom in this country have to put up their own prescriptions. It bears, upon every page, the impress of practical knowledge, conveyed in a plain common sense manner, and adapted to the comprehension of all who may read it.—*Southern Med. and Surg. Journal.*

That Edward Parrish, in writing a book upon *practical* Pharmacy some few years ago—one eminently original and unique—did the medical and pharmaceutical professions a great and valuable service, no one, we think, who has had access to its pages will deny; doubly welcome, then, is this new edition, containing the added results of his recent and rich experience as an observer, teacher, and practical operator in the pharmaceutical laboratory. The excellent plan of the first is more thoroughly.—*Peninsular Med. Journal*, Jan. 1860.

Of course, all apothecaries who have not already a copy of the first edition will procure one of this; it is, therefore, to physicians residing in the country and in small towns, who cannot avail themselves of the skill of an educated pharmaceutist, that we would especially commend this work. In it they will find all that they desire to know, and should know, but very little of which they do really know in reference to this important collateral branch of their profession; for it is a well established fact, that, in the education of physicians, while the science of medicine is generally well taught, very little attention is paid to the art of preparing them for use, and we know not how this defect can be so well remedied as by procuring and consulting Dr. Parrish's excellent work.—*St. Louis Med. Journal*, Jan. 1860.

We know of no work on the subject which would be more indispensable to the physician or student desiring information on the subject of which it treats. With Griffith's "Medical Formulary" and this, the practising physician would be supplied with nearly or quite all the most useful information on the subject.—*Charleston Med. Jour. and Review*, Jan. 1860.

PEASLEE (E. R.), M. D.,

Professor of Physiology and General Pathology in the New York Medical College.

HUMAN HISTOLOGY, in its relations to Anatomy, Physiology, and Pathology; for the use of Medical Students. With four hundred and thirty-four illustrations. In one handsome octavo volume, extra cloth, of over 600 pages. $3 75.

It embraces a library upon the topics discussed within itself, and is just what the teacher and learner need. We have not only the whole subject of Histology, interesting in itself, ably and fully discussed, but what is of infinitely greater interest to the student, because of greater practical value, are its relations to Anatomy, Physiology, and Pathology, which are here fully and satisfactorily set forth.—*Nashville Journ. of Med. and Surgery.*

We would recommend it as containing a summary of all that is known of the important subjects which it treats; of all that is in the great works of Simon and Lehmann, and the organic chemists in general. Master this one volume, and you know all that is known of the great fundamental principles of medicine, and we have no hesitation in saying that it is an honor to the American medical profession.—*St. Louis Med. and Surg. Journal.*

ROKITANSKY (CARL), M. D.,

Curator of the Imperial Pathological Museum, and Professor at the University of Vienna, &c.

A MANUAL OF PATHOLOGICAL ANATOMY. Four volumes, octavo, bound in two, extra cloth, of about 1200 pages. Translated by W. E. Swaine, Edward Sieveking, C. H. Moore, and G. E. Day. $7 50.

The profession is too well acquainted with the reputation of Rokitansky's work to need our assurance that this is one of the most profound, thorough, and valuable books ever issued from the medical press. It is *sui generis*, and has no standard of comparison. It is only necessary to announce that it is issued in a form as cheap as is compatible with its size and preservation, and its sale follows as a matter of course. No library can be called complete without it.—*Buffalo Med. Journal.*

An attempt to give our readers any adequate idea of the vast amount of instruction accumulated in these volumes, would be feeble and hopeless.—*Western Lancet.*

ROYLE'S MATERIA MEDICA AND THERAPEUTICS; including the Preparations of the Pharmacopœias of London, Edinburgh, Dublin, and of the United States. With many new medicines. Edited by Joseph Carson, M. D. With ninety-eight illustrations. In one large octavo volume, extra cloth, of about 700 pages. $3 00.

RIGBY (EDWARD), M. D.,

Senior Physician to the General Lying-in Hospital, &c.

A SYSTEM OF MIDWIFERY. With Notes and Additional Illustrations. Second American Edition. One volume octavo, extra cloth, 422 pages. $2 50.

BY THE SAME AUTHOR.

ON THE CONSTITUTIONAL TREATMENT OF FEMALE DISEASES. In one neat royal 12mo. volume, extra cloth, of about 250 pages. $1 00.

RAMSBOTHAM (FRANCIS H.), M. D.

THE PRINCIPLES AND PRACTICE OF OBSTETRIC MEDICINE AND SURGERY, in reference to the Process of Parturition. A new and enlarged edition, thoroughly revised by the Author. With Additions by W. V. KEATING, M. D., Professor of Obstetrics, &c., in the Jefferson Medical College, Philadelphia. In one large and handsome imperial octavo volume, of 650 pages, strongly bound in leather, with raised bands; with sixty-four beautiful Plates, and numerous Wood-cuts in the text, containing in all nearly 200 large and beautiful figures. $7 00.

From Prof. Hodge, of the University of Pa.

To the American public, it is most valuable, from its intrinsic undoubted excellence, and as being the best authorized exponent of British Midwifery. Its circulation will, I trust, be extensive throughout our country.

It is unnecessary to say anything in regard to the utility of this work. It is already appreciated in our country for the value of the matter, the clearness of its style, and the fulness of its illustrations. To the physician's library it is indispensable, while to the student as a text-book, from which to extract the material for laying the foundation of an education on obstetrical science, it has no superior.—*Ohio Med and Surg. Journal.*

The publishers have secured its success by the truly elegant style in which they have brought it out, excelling themselves in its production, especially in its plates. It is dedicated to Prof. Meigs, and has the emphatic endorsement of Prof. Hodge, as the best exponent of British Midwifery. We know of no text-book which deserves in all respects to be more highly recommended to students, and we could wish to see it in the hands of every practitioner, for they will find it invaluable for reference.—*Med. Gazette.*

RICORD (P.), M. D.

LETTERS ON SYPHILIS. Translated by W. P. LATTIMORE, M. D. In one neat octavo volume, of 270 pages, extra cloth. $2 00.

SMITH (HENRY H.), M. D., AND HORNER (WILLIAM E.), M. D.

AN ANATOMICAL ATLAS, illustrative of the Structure of the Human Body. In one volume, large imperial octavo, extra cloth, with about six hundred and fifty beautiful figures. $4 50.

The plan of this Atlas, which renders it so peculiarly convenient for the student, and its superb artistical execution, have been already pointed out. We must congratulate the student upon the completion of this Atlas, as it is the most convenient work of the kind that has yet appeared; and we must add, the very beautiful manner in which it is "got up" is so creditable to the country as to be flattering to our national pride.—*American Medical Journal.*

SMITH (EDWARD), M. D., LL.D., F.R.S.

Assistant Physician to the Hospital for Consumption and Diseases of the Chest, Brompton, &c.

CONSUMPTION; ITS EARLY AND REMEDIABLE STAGES. In one neat octavo volume of 254 pages, extra cloth. $2 25.

One-half of Dr. Smith's work is devoted to the treatment of Tuberculosis. We find in this portion of the work no occasion to join issue with the author; but, on the contrary, much which we would commend to the reader's attention. Dr. Smith attaches far greater importance to hygienic measures than to drugs in the treatment of the disease. In taking leave of the work, we would express the hope that the author will furnish occasions for the renewal of our intercourse as a reader, if not as a reviewer.—*Am. Med. Journal*, Jan. 1863.

SHARPEY (WILLIAM), M. D., JONES QUAIN, M. D., AND RICHARD QUAIN, F. R. S., &c.

HUMAN ANATOMY. Revised, with Notes and Additions, by JOSEPH LEIDY, M. D., Professor of Anatomy in the University of Pennsylvania. Complete in two large octavo volumes, extra cloth, of about thirteen hundred pages. With over 500 illustrations. $6 00.

SOLLY ON THE HUMAN BRAIN; its Structure, Physiology, and Diseases. From the Second and much enlarged London edition. In one octavo volume, extra cloth, of 500 pages, with 120 wood-cuts. $2 50.

SKEY'S OPERATIVE SURGERY. In one very handsome octavo volume, extra cloth, of over 650 pages, with about one hundred wood-cuts. $3 25.

SIMON'S GENERAL PATHOLOGY, as conducive to the Establishment of Rational Principles for the prevention and Cure of Disease. In one octavo volume, extra cloth, of 212 pages. $1 25.

STILLE (ALFRED), M. D.,

Professor of the Theory and Practice of Medicine in the University of Pennsylvania.

THERAPEUTICS AND MATERIA MEDICA; a Systematic Treatise on the Action and Uses of Medicinal Agents, including their Description and History. Second Edition, revised and enlarged. In two large and handsome octavo volumes, extra cloth. $10 00.

This work is designed especially for the student and practitioner of medicine, and treats the various articles of the Materia Medica from the point of view of the bedside, and not of the shop or of the lecture-room. While thus endeavoring to give all practical information likely to be useful with respect to the employment of special remedies in special affections, and the results to be anticipated from their administration, a copious Index of Diseases and their Remedies renders the work eminently fitted for reference by showing at a glance the different means which have been employed, and enabling the practitioner to extend his resources in difficult cases with all that the experience of the profession has suggested.

The speedy demand for another edition of this work shows that it has acceptably filled an acknowledged want No exertion of the author has been wanting to render it worthy a continuance of the favor with which it has been received, while an alteration in the typographical arrangement has accommodated the additions without increasing unduly the size of the volumes.

Rarely, indeed, have we had submitted to us a work on medicine so ponderous in its dimensions as that now before us, and yet so fascinating in its contents. It is, therefore, with a peculiar gratification that we recognize in Dr. Stillé the possession of many of those more distinguished qualifications which entitle him to approbation, and which justify him in coming before his medical brethren as an instructor. A comprehensive knowledge, tested by a sound and penetrating judgment, joined to a love of progress—which a discriminating spirit of inquiry has tempered so as to accept nothing new because it is new, and abandon nothing old because it is old, but which estimates either according to its relations to a just logic and experience—manifests itself everywhere, and gives to the guidance of the author all the assurance of safety which the difficulties of his subject can allow. In conclusion, we earnestly advise our readers to ascertain for themselves, by a study of Dr. Stillé's volumes, the great value and interest of the stores of knowledge they present. We have pleasure in referring rather to the ample treasury of undoubted truths, the real and assured conquest of medicine, accumulated by Dr. Stille in his pages; and commend the sum of his labors to the attention of our readers, as alike honorable to our science, and creditable to the zeal, the candor, and the judgment of him who has garnered the whole so carefully.—*Edinburgh Med. Journal.*

The most recent authority is the one last mentioned, Stillé. His great work on "Materia Medica and Therapeutics," published last year, in two octavo volumes, of some sixteen hundred pages, while it embodies the results of the labor of others up to the time of publication, is enriched with a great amount of original observation and research. We would draw attention, by the way, to the very convenient mode in which the *Index* is arranged in this work. There is first an "Index of Remedies;" next an "Index of Diseases and their Remedies." Such an arrangement of the Indices, in our opinion, greatly enhances the practical value of books of this kind. In tedious, obstinate cases of disease, where we have to try one remedy after another until our stock is pretty nearly exhausted, and we are almost driven to our wit's end, such an index as the second of the two just mentioned, is precisely what we want.—*London Med. Times and Gazette*, April, 1861.

We think this work will do much to obviate the reluctance to a thorough investigation of this branch of scientific study, for in the wide range of medical literature treasured in the English tongue, we shall hardly find a work written in a style more clear and simple, conveying forcibly the facts taught, and yet free from turgidity and redundancy. There is a fascination in its pages that will insure to it a wide popularity and attentive perusal, and a degree of usefulness not often attained through the influence of a single work.

SIMPSON (J. Y.), M. D.,

Professor of Midwifery, &c., in the University of Edinburgh, &c.

CLINICAL LECTURES ON THE DISEASES OF WOMEN. With numerous illustrations. In one handsome octavo volume, of over 500 pages, extra cloth, $4 00.

The principal topics embraced in the Lectures are Vesico-Vaginal Fistula, Cancer of the Uterus, Treatment of Carcinoma by Caustics, Dysmenorrhœa, Amenorrhœa, Closures, Contractions, &c., of the Vagina, Vulvitis, Causes of Death after Surgical Operations, Surgical Fever, Phlegmasia Dolens, Coccyodinia, Pelvic Cellulitis, Pelvic Hæmatoma, Spurious Pregnancy, Ovarian Dropsy, Ovariotomy, Cranioclasm, Diseases of the Fallopian Tubes, Puerperal Mania, Sub-Involution and Super-Involution of the Uterus, &c. &c.

As a series of monographs on these important topics—many of which receive little attention in the ordinary text-books—elucidated with the extensive experience and readiness of resource for which Professor Simpson is so distinguished, there are few practitioners who will not find in its pages matter of the utmost importance in the treatment of obscure and difficult cases.

SALTER (H. H.), M. D.

ASTHMA; its Pathology, Causes, Consequences, and Treatment. In one vol. 8vo., extra cloth. $2 50.

The portion of Dr. Salter's work which is devoted to treatment, is of great practical interest and value. It would be necessary to follow him step by step in his remarks, not only on the medicinal, but also on the dietetic and hygienic treatment of the disease, in order to convey a just notion of the practical value of this part of his work. This our space forbids, and this we shall little regret, if, by our silence, we should induce our readers to possess themselves of the book itself; a book which, without doubt, deserves to be ranked among the most valuable of recent contributions to the medical literature of this country.—*Ranking's Abstract*, Jan., 1861.

SLADE (D. D.), M. D.

DIPHTHERIA: its Nature and Treatment, with an account of the History of its Prevalence in various countries. Second and revised edition. In one neat royal 12mo. volume, extra cloth. $1 25. (*Just Issued.*)

The original essay of Dr. Slade, to which the Fiske Fund prize for 1860 was awarded, appeared originally in this *Journal*. In the edition before us the essay has been revised with evident care, while such additions have been made to it as were suggested by the author's subsequent experience and observation. In its present form, the work furnishes to the student and young practitioner a very faithful and useful exposition of the principal facts that are now known in respect to the nature of diphtheria, its causes and treatment.—*Am. Journ. Med. Sciences*, Jan. 1861.

SARGENT (F. W.), M. D.

ON BANDAGING AND OTHER OPERATIONS OF MINOR SURGERY.

New edition, with an additional chapter on Military Surgery. One handsome royal 12mo. vol., of nearly 400 pages, with 184 wood cuts. Extra cloth, $1 75.

The value of this work as a handy and convenient manual for surgeons engaged in active duty, has induced the publishers to render it more complete for those purposes by the addition of a chapter on gun-shot wounds and other matters peculiar to military surgery. In its present form, therefore, it will be found a very cheap and convenient vade-mecum for consultation and reference in the daily exigencies of military as well as civil practice.

We consider that no better book could be placed in the hands of an hospital dresser, or the young surgeon, whose education in this respect has not been perfected. We most cordially commend this volume as one which the medical student should most closely study, to perfect himself in these minor surgical operations in which neatness and dexterity are so much required, and on which a great portion of his reputation as a future surgeon must evidently rest. And to the surgeon in practice it must prove itself a valuable volume, as instructive on many points which he may have forgotten.—*British American Journal*, May, 1862.

The instruction given upon the subject of *Bandaging*, is alone of great value, and while the author modestly proposes to instruct the students of medicine, and the younger physicians, we will say that experienced physicians will obtain many exceedingly valuable suggestions by its perusal. It will be found one of the most satisfactory manuals for reference in the field, or hospital yet published; thoroughly adapted to the wants of Military surgeons, and at the same time equally useful for ready and convenient reference by surgeons everywhere.—*Buffalo Med. and Surg. Journal*, June, 1862.

SMITH (W. TYLER), M. D.,

Physician Accoucheur to St. Mary's Hospital, &c.

ON PARTURITION, AND THE PRINCIPLES AND PRACTICE OF OBSTETRICS.

In one royal 12mo. volume, extra cloth, of 400 pages. $1 50.

BY THE SAME AUTHOR.

A PRACTICAL TREATISE ON THE PATHOLOGY AND TREATMENT OF LEUCORRHŒA.

With numerous illustrations. In one very handsome octavo volume, extra cloth, of about 250 pages. $2 00.

TANNER (T. H.), M. D.,

Physician to the Hospital for Women, &c.

A MANUAL OF CLINICAL MEDICINE AND PHYSICAL DIAGNOSIS.

To which is added The Code of Ethics of the American Medical Association. Third American Edition. In one neat volume, small 12mo., extra cloth. (Preparing.)

TAYLOR (ALFRED S.), M. D., F. R. S.,

Lecturer on Medical Jurisprudence and Chemistry in Guy's Hospital.

MEDICAL JURISPRUDENCE.

Fifth American, from the seventh improved and enlarged London edition. With Notes and References to American Decisions, by EDWARD HARTSHORNE, M. D. In one large 8vo. volume, extra cloth, of over 700 pages. $4 00.

This standard work having had the advantage of two revisions at the hands of the author since the appearance of the last American edition, will be found thoroughly revised and brought up completely to the present state of the science. As a work of authority, it must therefore maintain its position, both as a text-book for the student, and a compendious treatise to which the practitioner can at all times refer in cases of doubt or difficulty.

No work upon the subject can be put into the hands of students either of law or medicine which will engage them more closely or profitably; and none could be offered to the busy practitioner of either calling, for the purpose of casual or hasty reference, that would be more likely to afford the aid desired. We therefore recommend it as the best and safest manual for daily use.—*American Journal of Medical Sciences.*

It is not excess of praise to say that the volume before us is the very best treatise extant on Medical Jurisprudence. In saying this, we do not wish to be understood as detracting from the merits of the excellent works of Beck, Ryan, Traill, Guy, and others; but in interest and value we think it must be conceded that Taylor is superior to anything that has preceded it.—*N. W. Medical and Surg. Journal*

It is at once comprehensive and eminently practical, and by universal consent stands at the head of American and British legal medicine. It should be in the possession of every physician, as the subject is one of great and increasing importance to the public as well as to the profession.—*St. Louis Med. and Surg. Journal.*

This work of Dr. Taylor's is generally acknowledged to be one of the ablest extant on the subject of medical jurisprudence. It is certainly one of the most attractive books that we have met with; supplying so much both to interest and instruct, that we do not hesitate to affirm that after having once commenced its perusal, few could be prevailed upon to desist before completing it. In the last London edition, all the newly observed and accurately recorded facts have been inserted, including much that is recent of Chemical, Microscopical, and Pathological research, besides papers on numerous subjects never before published.—*Charleston Med. Journal and Review.*

BY THE SAME AUTHOR.

ON POISONS, IN RELATION TO MEDICAL JURISPRUDENCE AND MEDICINE.

Second American, from a second and revised London edition. In one large octavo volume, of 755 pages, extra cloth. $5 00.

Mr. Taylor's position as the leading medical jurist of England, has conferred on him extraordinary advantages in acquiring experience on these subjects, nearly all cases of moment being referred to him for examination, as an expert whose testimony is generally accepted as final. The results of his labors, therefore, as gathered together in this volume, carefully weighed and sifted, and presented in the clear and intelligible style for which he is noted, may be received as an acknowledged authority, and as a guide to be followed with implicit confidence.

BY THE SAME AUTHOR AND WM. BRANDE.

CHEMISTRY.

In one volume 8vo. See "BRANDE," p. 6.

TODD (ROBERT BENTLEY), M. D., F. R. S.,
Professor of Physiology in King's College, London; and
WILLIAM BOWMAN, F. R. S.,
Demonstrator of Anatomy in King's College, London.

THE PHYSIOLOGICAL ANATOMY AND PHYSIOLOGY OF MAN. With about three hundred large and beautiful illustrations on wood. Complete in one large octavo volume, of 950 pages, extra cloth. Price $4 75.

It is more concise than Carpenter's Principles, and more modern than the accessible edition of Müller's Elements; its details are brief, but sufficient; its descriptions vivid; its illustrations exact and copious; and its language terse and perspicuous.—*Charleston Med. Journal.*

A magnificent contribution to British medicine, and the American physician who shall fail to peruse it, will have failed to read one of the most instructive books of the nineteenth century.—*N. O. Med. and Surg. Journal.*

TODD (R. B.) M. D., F. R. S., &c.

CLINICAL LECTURES ON CERTAIN DISEASES OF THE URINARY ORGANS AND ON DROPSIES. In one octavo volume, 284 pages, extra cloth. $2 50.

BY THE SAME AUTHOR.

CLINICAL LECTURES ON CERTAIN ACUTE DISEASES. In one neat octavo volume, of 320 pages, extra cloth. $2 50.

TOYNBEE (JOSEPH), F. R. S.,
Aural Surgeon to, and Lecturer on Surgery at, St. Mary's Hospital.

A PRACTICAL TREATISE ON DISEASES OF THE EAR; their Diagnosis, Pathology, and Treatment. Illustrated with one hundred engravings on wood. In one very handsome octavo volume, extra cloth, $4 00.

The work is a model of its kind, and every page and paragraph of it are worthy of the most thorough study. Considered all in all—as an original work, well written, philosophically elaborated, and happily illustrated with cases and drawings—it is by far the ablest monograph that has ever appeared on the anatomy and diseases of the ear, and one of the most valuable contributions to the art and science of surgery in the nineteenth century.—*N. Amer. Medico-Chirurg. Review*, Sept. 1860.

We are speaking within the limits of modest acknowledgment, and with a sincere and unbiassed judgment, when we affirm that as a treatise on Aural Surgery, it is without a rival in our language or any other.—*Charleston Med. Journ. and Rev.*, Sept. 1860.

The work of Mr. Toynbee is undoubtedly, upon the whole, the most valuable production of the kind in any language. The author has long been known by his numerous monographs upon subjects connected with diseases of the ear, and is now regarded as the highest authority on most points in his department of science. Mr. Toynbee's work, as we have already said, is undoubtedly the most reliable guide for the study of the diseases of the ear in any language, and should be in the library of every physician.—*Chicago Med. Journal*, July, 1860.

WILLIAMS (C. J. B.), M. D., F. R. S.,
Professor of Clinical Medicine in University College, London, &c.

PRINCIPLES OF MEDICINE. An Elementary View of the Causes, Nature, Treatment, Diagnosis, and Prognosis of Disease; with brief remarks on Hygienics, or the preservation of health. A new American, from the third and revised London edition. In one octavo volume, extra cloth, of about 500 pages. $3 50.

WHAT TO OBSERVE
AT THE BEDSIDE AND AFTER DEATH, IN MEDICAL CASES.

Published under the authority of the London Society for Medical Observation. A new American, from the second and revised London edition. In one very handsome volume, royal 12mo., extra cloth. $1 00.

To the observer who prefers accuracy to blunders and precision to carelessness, this little book is invaluable.—*N. H. Journal of Medicine.*

One of the finest aids to a young practitioner we have ever seen.—*Peninsular Journal of Medicine.*

WALSHE (W. H.), M. D.,
Professor of the Principles and Practice of Medicine in University College, London, &c.

A PRACTICAL TREATISE ON DISEASES OF THE LUNGS; including the Principles of Physical Diagnosis. Third American, from the third revised and much enlarged London edition. In one vol. octavo, of 468 pages. extra cloth $3 00.

The present edition has been carefully revised and much enlarged, and may be said in the main to be rewritten. Descriptions of several diseases, previously omitted, are now introduced; an effort has been made to bring the description of anatomical characters to the level of the wants of the practical physician; and the diagnosis and prognosis of each complaint are more completely considered. The sections on TREATMENT and the Appendix have, especially, been largely extended.—*Author's Preface.*

BY THE SAME AUTHOR.

A PRACTICAL TREATISE ON THE DISEASES OF THE HEART AND GREAT VESSELS, including the Principles of Physical Diagnosis. Third American, from the third revised and much enlarged London edition. In one handsome octavo volume of 420 pages, extra cloth. $3 00.

The present edition has been carefully revised; much new matter has been added, and the entire work in a measure remodelled. Numerous facts and discussions, more or less completely novel, will be found in the description of the principles of physical diagnosis; but the chief additions have been made in the practical portions of the book. Several affections, of which little or no account had been given in the previous editions, are now treated of in detail.—*Author's Preface.*

New and much enlarged edition.

WATSON (THOMAS), M. D., &c.,

Late Physician to the Middlesex Hospital, &c.

LECTURES ON THE PRINCIPLES AND PRACTICE OF PHYSIC.

Delivered at King's College, London. A new American, from the last revised and enlarged English edition, with Additions, by D. Francis Condie, M. D., author of "A Practical Treatise on the Diseases of Children," &c. With one hundred and eighty-five illustrations on wood. In one very large and handsome volume, imperial octavo, of over 1200 closely printed pages in small type; extra cloth, $6 50; strongly bound in leather, with raised bands, $7 50.

That the high reputation of this work might be fully maintained, the author has subjected it to a thorough revision; every portion has been examined with the aid of the most recent researches in pathology, and the results of modern investigations in both theoretical and practical subjects have been carefully weighed and embodied throughout its pages. The watchful scrutiny of the editor has likewise introduced whatever possesses immediate importance to the American physician in relation to diseases incident to our climate which are little known in England, as well as those points in which experience here has led to different modes of practice; and he has also added largely to the series of illustrations, believing that in this manner valuable assistance may be conveyed to the student in elucidating the text. The work will, therefore, be found thoroughly on a level with the most advanced state of medical science on both sides of the Atlantic.

The additions which the work has received are shown by the fact that notwithstanding an enlargement in the size of the page, more than two hundred additional pages have been necessary to accommodate the two large volumes of the London edition (which sells at ten dollars), within the compass of a single volume, and in its present form it contains the matter of at least three ordinary octavos. Believing it to be a work which should lie on the table of every physician, and be in the hands of every student, the publishers have put it at a price within the reach of all, making it one of the cheapest books as yet presented to the American profession, while at the same time the beauty of its mechanical execution renders it an exceedingly attractive volume.

The fourth edition now appears, so carefully revised, as to add considerably to the value of a book already acknowledged, wherever the English language is read, to be beyond all comparison the best systematic work on the Principles and Practice of Physic in the whole range of medical literature. Every lecture contains proof of the extreme anxiety of the author to keep pace with the advancing knowledge of the day One scarcely knows whether to admire most the pure, simple, forcible English—the vast amount of useful practical information condensed into the Lectures—or the manly, kind-hearted, unassuming character of the lecturer shining through his work.—*Lond. Med. Times.*

Thus these admirable volumes come before the profession in their fourth edition, abounding in those distinguished attributes of moderation, judgment, erudite cultivation, clearness, and eloquence, with which they were from the first invested, but yet richer than before in the results of more prolonged observation, and in the able appreciation of the latest advances in pathology and medicine by one of the most profound medical thinkers of the day.—*London Lancet.*

The lecturer's skill, his wisdom, his learning, are equalled by the ease of his graceful diction, his eloquence, and the far higher qualities of candor, of courtesy, of modesty, and of generous appreciation of merit in others.—*N. A. Med.-Chir. Review.*

Watson's unrivalled, perhaps unapproachable work on Practice—the copious additions made to which (the fourth edition) have given it all the novelty and much of the interest of a new book.—*Charleston Med. Journal.*

Lecturers, practitioners, and students of medicine will equally hail the reappearance of the work of Dr. Watson in the form of a new—a fourth—edition. We merely do justice to our own feelings, and, we are sure, of the whole profession, if we thank him for having, in the trouble and turmoil of a large practice, made leisure to supply the hiatus caused by the exhaustion of the third edition. For Dr. Watson has not merely caused the lectures to be reprinted, but scattered through the whole work we find additions or alterations which prove that the author has in every way sought to bring up his teaching to the level of the most recent acquisitions in science.—*Brit. and For. Medico-Chir. Review.*

New and much enlarged edition.

WILSON (ERASMUS), F. R. S.

A SYSTEM OF HUMAN ANATOMY, General and Special.

A new and revised American, from the last and enlarged English Edition. Edited by W. H. Gobrecht, M. D., Professor of Anatomy in the Pennsylvania Medical College, &c. Illustrated with three hundred and ninety-seven engravings on wood. In one large and handsome octavo volume, of over 600 large pages; extra cloth, $4 00.

The publishers trust that the well earned reputation so long enjoyed by this work will be more than maintained by the present edition. Besides a very thorough revision by the author, it has been most carefully examined by the editor, and the efforts of both have been directed to introducing everything which increased experience in its use has suggested as desirable to render it a complete text-book for those seeking to obtain or to renew an acquaintance with Human Anatomy. The amount of additions which it has thus received may be estimated from the fact that the present edition contains over one-fourth more matter than the last, rendering a smaller type and an enlarged page requisite to keep the volume within a convenient size. The editor has exercised the utmost caution to obtain entire accuracy in the text, and has largely increased the number of illustrations, of which there are about one hundred and fifty more in this edition than in the last, thus bringing distinctly before the eye of the student everything of interest or importance.

It may be recommended to the student as no less distinguished by its accuracy and clearness of description than by its typographical elegance. The wood-cuts are exquisite.—*Brit. and For. Medical Review.*

An elegant edition of one of the most useful and accurate systems of anatomical science which has been issued from the press The illustrations are really beautiful. In its style the work is extremely concise and intelligible. No one can possibly take up this volume without being struck with the great beauty of its mechanical execution, and the clearness of the descriptions which it contains is equally evident. Let students, by all means examine the claims of this work on their notice, before they purchase a text-book of the vitally important science which this volume so fully and easily unfolds.—*Lancet.*

We regard it as the best system now extant for students.—*Western Lancet.*

It therefore receives our highest commendation.—*Southern Med. and Surg. Journal.*

WILSON (ERASMUS), F. R. S.

ON DISEASES OF THE SKIN. Fifth American, from the Fifth enlarged London edition. In one handsome octavo volume, of nearly 700 large pages, with illustrations on wood, extra cloth $4 50.

This classical work, which for twenty years has occupied the position of the leading authority in the English language on its important subject, has just received a thorough revision at the hands of the author, and is now presented as embodying the results of the latest investigations and experience on all matters connected with diseases of the skin. The increase in the size of the work shows the industry of the author, and his determination that it shall maintain the position which it has acquired as thoroughly on a level with the most advanced condition of medical science.

A few notices of the last edition are appended.

The writings of Wilson, upon diseases of the skin, are by far the most scientific and practical that have ever been presented to the medical world on this subject. The present edition is a great improvement on all its predecessors. To dwell upon all the great merits and high claims of the work before us, *seriatim*, would indeed be an agreeable service; it would be a mental homage which we could freely offer, but we should thus occupy an undue amount of space in this *Journal*. We will, however look at some of the more salient points with which it abounds, and which make it incomparably superior to all other treatises on the subject of dermatology. No mere speculative views are allowed a place in this volume, which, without a doubt, will, for a very long period, be acknowledged as the chief standard work on dermatology. The principles of an enlightened and rational therapeia are introduced on every appropriate occasion.—*Am. Jour. Med Science.*

When the first edition of this work appeared, about fourteen years ago, Mr. Erasmus Wilson had already given some years to the study of Diseases of the Skin, and he then expressed his intention of devoting his future life to the elucidation of this branch of Medical Science. In the present edition Mr. Wilson presents us with the results of his matured experience, and we have now before us not merely a reprint of his former publications, but an entirely new and rewritten volume. Thus, the whole history of the diseases affecting the skin, whether they originate in that structure or are the mere manifestations of derangement of internal organs, is brought under notice, and the book includes a mass of information which is spread over a great part of the domain of Medical and Surgical Pathology. We can safely recommend it to the profession as the best work on the subject now in existence in the English language.—*London Med. Times and Gazette.*

No matter what other treatises may be in the library of the medical attendant, he needs the clear and suggestive counsels of Wilson, who is thoroughly posted up on all subjects connected with cutaneous pathology. We have, it is very true, other valuable works on the maladies that invade the skin; but, compared with the volume under consideration, they are certainly to be regarded as inferior lights in guiding the judgment of the medical man.—*Boston Med. and Surg. Journal*, Oct. 1857.

The author adopts a simple and entertaining style. He strives to clear away the complications of his subject, and has thus produced a book filled with a vast amount of information, in a form so agreeable as to make it pleasant reading, even to the uninitiated. More especially does it deserve our praise because of its beautiful and complete atlas, which the American publishers have successfully imitated from the original plates. We pronounce them by far the best imitations of nature yet published in our country. With the text-book and atlas at hand, the diagnosis is rendered easy and accurate, and the practitioner feels himself safe in his treatment. We will add that this work, although it must have been very expensive to the publishers, is not high priced. There is no reason, then, to prevent every physician from obtaining a work of such importance, and one which will save him both labor and perplexity.—*Va. Med. Journal.*

As a practical guide to the classification, diagnosis, and treatment of the diseases of the skin, the book is complete. We know nothing, considered in this aspect, better in our language; it is a safe authority on all the ordinary matters which, in this range of diseases, engage the practitioner's attention, and possesses the high quality—unknown, we believe, to every older manual, of being on a level with science's high-water mark; a sound book of practice.—*London Med. Times.*

ALSO,

A SERIES OF PLATES ILLUSTRATING WILSON ON DISEASES OF THE SKIN; consisting of twenty beautifully executed plates, of which thirteen are exquisitely colored, presenting the Normal Anatomy and Pathology of the Skin, and containing accurate representations of about one hundred varieties of disease, most of them the size of nature. Price in cloth. $5 50.

In beauty of drawing and accuracy and finish of coloring these plates will be found equal to anything of the kind as yet issued in this country. The value of the new edition is enhanced by an additional colored plate.

The plates by which this edition is accompanied leave nothing to be desired, so far as excellence of delineation and perfect accuracy of illustration are concerned.—*Medico-Chirurgical Review.*

Of these plates it is impossible to speak too highly. The representations of the various forms of cutaneous disease are singularly accurate, and the coloring exceeds almost anything we have met with.—*British and Foreign Medical Review.*

We have already expressed our high appreciation of Mr. Wilson's treatise on Diseases of the Skin. The plates are comprised in a separate volume, which we counsel all those who possess the text to purchase. It is a beautiful specimen of color printing, and the representations of the various forms of skin disease are as faithful as is possible in plates of the size.—*Boston Med. and Surg. Journal*, April 8, 1858.

ALSO, the TEXT and PLATES done up in one handsome volume, extra cloth, price $9 50.

BY THE SAME AUTHOR.

THE DISSECTOR'S MANUAL; or, Practical and Surgical Anatomy. Third American, from the last revised and enlarged English edition. Modified and rearranged, by WILLIAM HUNT, M. D., Demonstrator of Anatomy in the University of Pennsylvania. In one large and handsome royal 12mo. volume, extra cloth, of 582 pages, with 154 illustrations. $2 00.

BY THE SAME AUTHOR.

HEALTHY SKIN; A Popular Treatise on the Skin and Hair, their Preservation and Management. Second American, from the fourth London edition. One neat volume, royal 12mo., extra cloth, of about 300 pages, with numerous illustrations. $1 00.

WINSLOW (FORBES), M. D., D. C. L., &c.

ON OBSCURE DISEASES OF THE BRAIN AND DISORDERS OF THE MIND; their incipient Symptoms, Pathology, Diagnosis, Treatment, and Prophylaxis. Second American, from the third and revised English edition. In one handsome octavo volume, of nearly 600 pages, extra cloth. $4 25. (*Now Ready.*)

We close this brief and necessarily very imperfect notice of Dr. Winslow's great and classical work, by expressing our conviction that it is long since so important and beautifully written a volume has issued from the British medical press.—*Dublin Med. Press*, July 25, 1860.

We honestly believe this to be the best book of the season.—*Ranking's Abstract*, July, 1860.

The latter portion of Dr. Winslow's work is exclusively devoted to the consideration of Cerebral Pathology. It completely exhausts the subject, in the same manner as the previous seventeen chapters relating to morbid psychical phenomena left nothing unnoticed in reference to the mental symptoms premonitory of cerebral disease. It is impossible to overrate the benefits likely to result from a general perusal of Dr. Winslow's valuable and deeply interesting work.—*London Lancet*, June 23, 1860.

It contains an immense mass of information.—*Brit. and For. Med.-Chir. Review*, Oct. 1860.

WEST (CHARLES), M. D.,

Accoucheur to and Lecturer on Midwifery at St. Bartholomew's Hospital, Physician to the Hospital for Sick Children, &c.

LECTURES ON THE DISEASES OF WOMEN. Second American, from the second London edition. In one handsome octavo volume, extra cloth, of about 500 pages; price $3 25.

*** Gentlemen who received the first portion, as issued in the "Medical News and Library," can now complete their copies by procuring Part II, being page 309 to end, with Index, Title matter, &c., 8vo., cloth, price $1 25.

We must now conclude this hastily written sketch with the confident assurance to our readers that the work will well repay perusal. The conscientious, painstaking, practical physician is apparent on every page.—*N. Y. Journal of Medicine.*

We know of no treatise of the kind so complete and yet so compact.—*Chicago Med. Jour.*

A fairer, more honest, more earnest, and more reliable investigator of the many diseases of women and children is not to be found in any country.—*Southern Med. and Surg. Journal.*

We have to say of it, briefly and decidedly, that it is the best work on the subject in any language; and that it stamps Dr. West as the *facile princeps* of British obstetric authors.—*Edinb. Med. Journ.*

We gladly recommend his Lectures as in the highest degree instructive to all who are interested in obstetric practice.—*London Lancet.*

Happy in his simplicity of manner, and moderate in his expression of opinion, the author is a sound reasoner and a good practitioner, and his book is worthy of the handsome garb in which it has appeared.—*Virginia Med. Journal.*

We must take leave of Dr. West's very useful work, with our commendation of the clearness of its style, and the industry and sobriety of judgment of which it gives evidence.—*London Med. Times.*

Sound judgment and good sense pervade every chapter of the book. From its perusal we have derived unmixed satisfaction.—*Dublin Quart. Journ.*

BY THE SAME AUTHOR. (*Now Ready.*)

LECTURES ON THE DISEASES OF INFANCY AND CHILDHOOD. Fourth American, from the fifth enlarged and improved London edition. In one handsome octavo volume, extra cloth, of about six hundred and fifty pages. $4 50.

The numerous editions through which this work has passed on both sides of the Atlantic, are the best evidence that it has met a want felt by the profession. Few practitioners, indeed, have had the opportunities of observation and experience enjoyed by the author. In his Preface he remarks: "The present edition embodies the results of 1200 recorded cases, and of nearly 400 post-mortem examinations, collected from between 30,000 and 40,000 children, who, during the past twenty-six years have come under my care, either in public or in private practice." The universal favor with which the work has been received shows that the author has made good use of these unusual advantages.

The three former editions of the work now before us have placed the author in the foremost rank of those physicians who have devoted special attention to the diseases of early life. We attempt no analysis of this edition, but may refer the reader to some of the chapters to which the largest additions have been made—those on Diphtheria, Disorders of the Mind, and Idiocy, for instance—as a proof that the work is really a new edition; not a mere reprint. In its present shape it will be found of the greatest possible service in the every-day practice of nine-tenths of the profession.—*Med. Times and Gazette*, London, Dec. 10, 1859.

All things considered, this book of Dr. West is by far the best treatise in our language upon such modifications of morbid action and disease as are witnessed when we have to deal with infancy and childhood. It is true that it confines itself to such disorders as come within the province of the *physician*, and even with respect to these it is unequal as regards minuteness of consideration, and some diseases it omits to notice altogether. But those who know anything of the present condition of pædiatrics will readily admit that it would be next to impossible to effect more, or effect it better, than the accoucheur of St. Bartholomew's has done in a single volume. The lecture (XVI.) upon Disorders of the Mind in children is an admirable specimen of the value of the later information conveyed in the Lectures of Dr. Charles West.—*London Lancet*, Oct. 22, 1859.

Since the appearance of the first edition, about eleven years ago, the experience of the author has doubled; so that, whereas the lectures at first were founded on six hundred observations, and one hundred and eighty dissections made among nearly fourteen thousand children, they now embody the results of nine hundred observations, and two hundred and eighty-eight post-mortem examinations made among nearly thirty thousand children, who, during the past twenty years, have been under his care.—*British Med. Journal*, Oct. 1, 1859.

BY THE SAME AUTHOR.

AN ENQUIRY INTO THE PATHOLOGICAL IMPORTANCE OF ULCERATION OF THE OS UTERI. In one neat octavo volume, extra cloth. $1 25.